Winners and Losers in Britain's 1722 Debt restructuring

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Abstract

Preliminary and very incomplete.

The South Sea operation of 1720 was intended as a debt conversion for the benefit of the government. I first examine the origins and the motivations of the operation, in the context of the British debt's management. Although not intended as a default, it came very close to it, but Parliament eventually stepped back. In the course of the bubble, the operation turned into an ex-post Ponzi scheme, redistributing from late to early entrants. Parliament intervened ex-post and could have reversed the redistributions and equalized outcomes, but it did so to a very limited extent. In the end, the government profited little, but the respect of "Parliamentary faith" was established.

*The views expressed here do not necessarily represent those of the Federal Reserve Bank of Chicago or the Federal Reserve System.

1 Introduction

The South Sea Bubble of 1720 is an episode in British financial history that counts, along with the contemporaneous Mississippi Bubble in France and the early Tulipmania in 17th century Holland, as one of the mythical asset bubbles of early modern financial markets. It has, of course, been abundantly studied: the classics include Anderson (1787), Scott (1911), Carswell (1960), Dickson (1967), and Neal (1990). More recently, and perhaps because of recent events in financial markets, economic historians have focused on the bubble aspect (Temin and Voth 2004; Dale, Johnson, and Tang 2005; Shea 2007; Kleer 2015; Giusti, Noussair, and Voth 2014): was it a bubble, if so what caused it, in particular was it artificially sustained, etc.

I approach the topic from a different angle, that of debt restructuring. The essence of the South Sea bubble was a conversion of government debt into the equity of a private company. The bubble, that is, the rapid increase in the price of the company's stock followed by a crash, played a key role because the terms of exchange for debt into equity depended on the market price of the equity. The question on which I focus is: what happened to the assets after the crash? In particular, who won and who lost, and why?

2 Early History of the South Sea Company

Why is it important to look at the early history? The SS history is ultimately about a failure of the Modigliani-Miller theorem: how could the equity of a company be worth more than its net worth. So we need to look at the items on its balance sheet, and is corporate structure. The company's asset were of two distinct kinds: one was a trade activity, based on an intangible asset (a monopoly), the other was a purely financial asset (a form of government debt).

2.1 Fiscal policy after the Glorious Revolution

In the decade that followed the Glorious Revolution of 1688, a set of principles were developed that governed fiscal policy for a century, and I briefly summarize them first.

Parliament, consisting of the sovereign, the House of Lords, and the House of Commons, was supreme. Money could be raised (by taxes or loans) and spent only on the basis of acts of Parliament, and the House of Commons had a monopoly on the matter (only the Commons could initiate money bills and the Lords couldn't amend them).

The Civil List Act of 1698 established a separation between civil spending and the rest (military and debt service). A set of tax revenues were assigned to fund the civil list for the duration of the reign; at the beginning of each reign the assignment was extended, with some modifications.

Debts were funded by acts that established or extended taxes, and in principle the duration of the taxes matched the duration of the corresponding debt instruments.

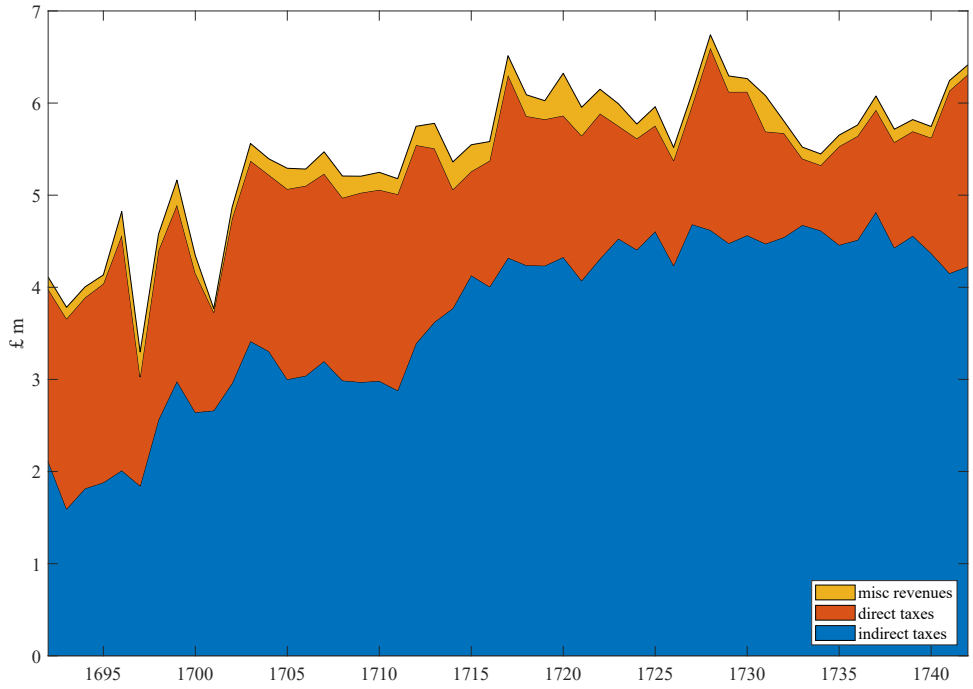

Figure 1: Fiscal revenues, 1692–1742. Indirect taxes are customs, excise, and stamps. Direct taxes are land and assessed taxes and poll tax. Miscellaneous revenues are post office, crown lands, and other. Source: *BPP* 1869, vol. 1.

Finally, an annual process handled the remainder, namely military expenditures and deficiencies in tax revenues assigned to the civil list or to existing debts. The process began with the new session of Parliament in October or November (the fiscal year ended on Michaelmas, i.e., September 29). The government presented to the Commons planned military expenditures grouped in Navy, Army, and Ordnance (fortifications, armaments, and supplies), known deficiencies, and any special expenditures. The Commons voted Supplies (authorizations to spend) and Ways and Means (funding). For the civil list, deficits were funded either by additional monies or by loans backed by future civil list revenues (as in 1713).

The main sources of funds in the annual supplies were any unspent funds ("grants overpluses"), the land tax, the malt tax, and new loans. The two taxes, contrary to all other taxes that funded debt, were voted for one year only.[1] The malt tax was usually set at the same rate and amounted to around £700,000. The year-to-year margin of adjustment was the land tax, whose rate varied substantially over time, and whose amount varied between £1m and 2m.

2.2 Forms of government debt until 1711

Debt came in two forms, unfunded (short-term, floating) and funded (long-term).

[1] In practice the land tax and malt tax bills authorized short-term loans, first in the form of tallies and after 1720 in the form of exchequer bills.

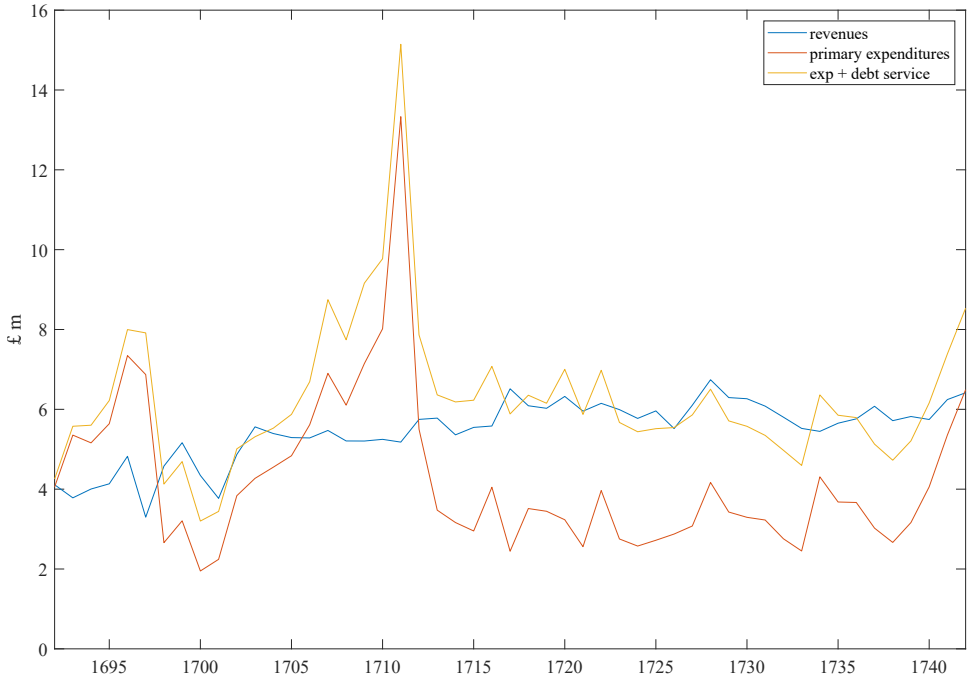

Figure 2: Revenues and expenditures, 1692–1742. Revenues are the total as in Figure 1, primary expenditures comprise the civil government and navy, army, and ordnance. Source: *BPP* 1869, vol. 1.

Long-term debt

The long-term debt was "funded" because a specific stream of fiscal revenues called a fund was assigned specifically to meet the scheduled interest payments (and principal repayment if applicable). Parliament often obligated itself to make up any shortfall from the next supply bills. Conversely, surpluses could be used for other purposes as unappropriated monies.

From the Glorious Revolution to 1710, the funded debt took two main forms. The first was debt issued directly to the public and were called "terminable annuities": a stream of constant annual payments or annuities that ended after a number of years (predetermined or dependent on the life of one or more individuals for life annuities and tontines). There was no principal repayment and no face value: these debts could not be extinguished early; rather, they were self-amortizing.[2]

The other form was owned not directly by the public, but by corporations: the Bank of England (BoE, founded in 1694) and the East India Company (EIC, founded in 1698). The corporations were in turned owned by the public in the form of tradeable shares. In this type of form of government debt securitization (Quinn 2008) the government sold an annuity to the corporation for cash, and the corporation raised the cash by offering shares. Prospective lenders became shareholders in a corporation that owned two assets: (a) the government annuity (along with some management fees), and (b) some commercial, presumably valuable, privilege. Put another way, the lenders who bought an

[2]The loans were the "long annuities" (for 99 years) of 1704–08; the "short" annuities, i.e., the lottery loans of 1694 (16 years) and 1710 (32 years); and the tontine of 1693 and life annuities of 1693 and 1694. Life annuities and tontines were used again from 1745 and short annuities from 1777.

annuity from the government were incorporated and, as a corporation, received valuable privileges, designed to reduce the required interest rate on the annuity. The annuity, as with other long-term debt, was funded by a specific tax.[3] On occasion the government borrowed additional amounts by allowing the corporations to issue more shares, backed by an increase in the annuity.

The key differences between the annuities owned by the corporations and those owned by the public was that the former were (a) perpetual, but (b) had a face value (the "stock") and was redeemable after a certain delay. Typically a date was set after which Parliament could give notice (usually one year in advance) of its intention to redeem the debt. This was in effect a call option on the perpetual debt, with the face value being the strike price. The annuity could be redeemable only in whole, or in increments.

Short-term debt

Short-term debt was either a liability of the Exchequer or of treasurers of the military departments (Army, Navy, Ordnance). Exchequer debt was authorized by Parliament and consisted of old-fashioned tallies, assigned on a specific tax, or the more recent Exchequer bills, assigned on whatever funds might be available in the Exchequer.[4]

Funding for tallies came from taxes levied for a fixed term of years. The Act levying the tax specified the maximal amount that could be raised and the interest rate allowed. No time was set for repayment: instead, the principal was repaid "in course" (in the same order as it had been received) and interest was paid quarterly "for forebearance." If the tax ran out before all principal had been repaid, the creditor just had to wait. For example, repayment of the Malt lottery tickets of 1697 (8 & 9 Will. 3, c. 22) stopped in 1699 when the malt tax ran out. Their status remained uncertain until funded was provided by second general mortgage of 1702; repayments resumed in 1706. Another example is the tax on hops of 1710 (9 Anne, c. 13): when the tax ran out after four years only half the loan had been repaid, and it took several years before the outstanding tallies were redeemed.[5]

Describe briefly the Exchequer bills.

If the tax revenues proved insufficient to repay the debt, additional monies were provided (if the Act called for it), or else arrears were refinanced with a new bundle of tax revenues (CTB 25:xxxiv–xxxvi). The first Deficiencies Act of 1697 (8 &9 Will. 3, c. 20) allowed for the conversion of some tallies into Bank of England stock (the so-called "ingraftment of tallies") and extended a package of existing taxes that were due to expire in 1701 to 1706, thus providing for repayment of a variety of tallies from 1701 to 1706. The second Deficiencies Act of 1702 (1 Anne, st. 1, c. 13) extended the same taxes to 1710 to provide for repayment of another bundle of unpaid tallies.

[3]The Bank of England was assigned five sevenths of the revenue of an excise tax, the rest assigned to life annuities issued at the same time. The East India company's funding was a tax on salt.

[4]Traditional tallies were payable by the tax collectors (tallies of pro) but by the early 18th c. most tallies were payable at the Exchequer (tallies of sol). By the 1720s tallies were largely replaced by Exchequer bills managed by the Bank of England.

[5]The bottom of Castaing's *Course of the Exchange* kept track of the repayments on all outstanding tallies.

The same[6] package taxes, amounting to around £400,000 per year, was extended to 1712 (3d General Mortgage Act of 1706, 5 Anne, c. 27), then to 1714 (4th General Mortgage Act of 1707, 6 Anne, c. 19), then to 1716 (5th General Mortgage Act of 1708, 7 Anne, c. 8) and to 1720 (6th General Mortgage Act of 1709, 8 Anne, c. 14). These acts, instead of repaying existing tallies, funded issues of new tallies. This was the traditional system of tallies, but backed by a package of taxes rather than a single tax, a small step in the modernization of the system.

2.3 Founding of the Company (1711)

Debt	£
Victualling Bills	1,846,672
Navy Bills	1,772,662
Transport Debentures	542,113
Ordnance Debentures	186,381
Army and Transport Debentures	1,060,422
interest	369,396
Hanover subsidy of 1696	9,375
General Mortgage Tallies	1,006,909
Tallies on Coals	12,637
public money	2,371,402
total	9,177,970

Table 1: Debts converted to South Sea stock in 1711. Source: CTB 26:cdxxii.

The South Sea Company, or, to call it by its full name, *the Governor and Merchants of Great Britain trading to the South Seas and other parts of America, and for Encouraging of Fishery*, was chartered by letters patent of 8 Sep 1711, based on an Act passed a few weeks earlier (9 Anne c. 21).

Its creation was a variation on debt securitization (on the new company's liability side), and on general mortgages (on its asset side).

As with the other two companies (BoE and EIC), the equity was converted government debt, but existing debt rather than new debt.[7] The debt was mostly department debt: short-term IOUs issued by Navy and Army treasurers, which were at the time deeply discounted in the secondary market: 29% for Navy bills, 23% for Army debentures (Flinn 1960), but also obligations that had not yet been liquidated, such as wages. These debts had accumulated during the War of Spanish Succession under the Whig ministry: when the new Tory administration came in 1710, it tallied up the existing debts but did not wish to use the existing companies, too closely associated with the Whigs (Carswell 1960, 54).

As with the other two companies, the South Sea's assets were a government annuity and a commercial privilege, discussed in the next section. The annuity, whose capital

[6]More or less. Some taxes (half of the so-called customs subsidy) was extended for 96 years by 6 Anne, c. 48 and assigned to fund the circulation of Exchequer bills.

[7]A small portion (£0.5m out of £9.2m) consisted in new funds (Dickson 1967, 68). The 1697 increase in BoE stock was also a securitization of existing debt, but on a much smaller scale.

equaled the face value of debts taken in by the operation, bore a 6% return and was redeemable at any time after December 25, 1716, upon one year's notice, in whole.[8]

The annuity's fiscal backing consisted mostly of the package of taxes, or fund, used previously for the general mortgage acts, which were now extended forever and used to back a perpetual annuity rather than periodic issues of short-term tallies. This fund, however, was already fully encumbered by the tallies of the previous general mortgages: the third until 1712, the fourth until 1714, the fifth until 1716, and the sixth until 1720. The fund was mostly freed after 1716 by allowing the tallies of the sixth mortgage to be subscribed into the new company, although not all were.[9]

From the point of view of fiscal policy, or debt management, the operation was fairly straightforward. It consisted in funding short-term debt by levying new taxes, although the twist was that debtors did not receive cash raised by a loan, but a tradeable share. The South Sea operation extended taxes but forever rather than a limited time, and for the purpose of funding the interest on a set of short-term obligations, rather than redeem them over time. The Act enumerated a list of outstanding debts, based on a committee report, and assigned the extended taxes to fund the debts at 6%. To answer these debts, a company was created which issued stock for the outstanding debts. The debtors who turned in their debts were incorporated, and the company was assigned two assets: the 6% interest on the fund, payable by the Exchequer, as well as a trading privilege discussed later.

From the point of view of corporate finance the details are more complicated. Some debtors had already received securities (debentures, bills, tallies, tickets) while others hadn't. In addition, part of the debt included in the operation (some of the tallies on the sixth General Mortgage Act) had not been issued and were still in the hands of government officials. The subscription of South Sea stock took place in two steps: from July 2 to July 31, 1711, bills and tallies in the hands of the public were received for the stock. Then, from October 22, 1711 to December 1, 1713, stock was issued to government treasurers, either in exchange for tallies in their hands or to allow them to pay off debtors who did not have bills or tallies yet. [10]

The shares of the Company were registered, that is, ownership of a given amount of nominal capital was inscribed on the ledgers of the Company, and selling the stock required a transfer on the books.[11]

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[8]The following year an act (10 Anne, c. 30) clarified that the Company's existence and privileges would continue even after such redemption.

[9]Of the eligible £1.3m tallies, around £1m were subscribed. As we will see below their repayment in 1719 created difficulties for the Company.

[10]The table in Dickson (1967, 69) is based on the debts enumerated in the Act rather than the actual debts (CTB 26:cdxxii). The "public money," stock owned by the government, amounted to £2,371,402 (CTB 26:cdxxii, CTB 25:xxxviii-xlvi, CUL Ch(H) Papers 88, 1). Some of it was used to pay the government's annuity, as described below, and £0.885m was sold off publicly in September 1714, when the stock price was around 95%.

[11]The books opened on Sep. 22, 1711. The first market quotation appears on September 18 in the *Course of the Exchange*.

The trading privilege

The commercial privilege granted by the founding Act consisted in the exclusive right (that is, exclusive for all British subjects) in the trade with a geographically defined area of the Americas: namely, the Spanish possessions south of the Orinoco river (in present-day Venezuela) on the Atlantic coast, and the whole Pacific coast. The ships of the South Sea Company could only access the Pacific coast by coming and going through the Magellan straits or south of Cape Horn, and could not venture beyond 300 leagues west of the Pacific coast of the Americas, nor could they trade to Asia, so as not to infringe on the East India Company's monopoly.

This did not mean much as long as Britain and Spain were still at war, as they were in 1711.[12] But the Tory government, which had come in power in 1710, was intent on negotiating peace with Spain, and had high hopes of obtaining what was known as the Asiento trade, granted as a monopoly to Portuguese companies from 1687 and to French traders from 1701.

The negotiations were successful. By a contract signed on March 26, 1713 (old style), the king of Spain granted to the Queen of Great Britain the *Asiento de negros*, i.e., the exclusive privilege of importing slaves into the Spanish dominions. The contract was expressly included in the peace treaty of Utrecht between Spain and Great Britain signed on July 2, 1713 (o.s.; article 12).

Most of the contract deals with the slave trade: the Company was allowed to bring 144,000 slaves over thirty years, with payment of a duty for each slave.[13] The profits could be brought back in goods or money, free of tax. As a bonus the king granted two additional licenses in June 1713.

The other important component of the contract was a permission, granted on consideration of "the losses which former assientists have sustained." to send one ship of 500 tons each year to trade goods duty free. The king of Spain was entitled to a quarter of the profits and 5% on the remaining three quarters.

The peace was not proclaimed until 28 Feb 1714. Meanwhile the Company and the government wrangled over the assignment of the asiento (technically in the Queen's name) and two licenses for 500-ton ships (for the years 1713 and 1714) to the Company. The contract with Spain stated that the Queen was interested for a quarter of the profits, and she was unwilling to relinquish her share, only relenting in June 1714. The asiento and licenses were not formally assigned to the Company until September 1714, too late to send any ship that year. Other difficulties with the terms of the contract were only resolved by an amendment in 1716: since no annual ship had sailed in the first three years, the next ten ships were allowed to be of 650 tons.

The two license ships, former men-of-war lent by the government, sailed in 1715, the first of the Company's cargo ships. They, and the successive annual ships (all built by the Company) are listed in Table 2 until trading ended. The ships exported European

[12] Early plans to begin trade went nowhere (Satsuma 2012).

[13] The duty was £7.5 per *pieza de Indias*, a standard unit of measurement of slaves, for the first 4000 per year, and half that for the number exceeding 4800.

manufactured goods and brought back commodities (mostly cochineal and indigo) and bullion. Three wars interrupted trading and (despite clauses in the asiento) resulted in confiscations. The last, The War of "Jenkins's Ear," was in part endogenous to the Company's trade. Captain Jenkins was not employed by the Company when he lost his ear during a vigorous inspection of his vessel by the Spanish coastguards, but was chosen by the Company as poster-boy of its lobbying campaign for a forceful British response to Spanish practices. The Company's gambit, four years before the asiento was due to expire, was presumably to extract by force some monetary compensation from Spain. The immediate outcome was the capture of Portobelo by the British fleet in November 1739, but the hostilities were soon embroiled in a European-wide was that only ended in 1748, and the company only got £100,000 from Spain (see the Appendix).

For a variety of reasons (even aside from wars), annual ships did not sail annually, and in effect only sailed one third of the time. The profit estimates are approximate: they yield an average of £30,000 per ship.[14] The maximum is about £80,000 on a round-trip that took sixteen months.

ship	departure	return	profit
Elizabeth	Aug 1715	Nov 1716	50,600
Bedford	Nov 1715	Nov 1716	39,000
Royal Prince	Aug 1717	Dec 1718	79,800
war: Aug 1718 - Feb 1720			
Royal George	Nov 1721	Feb 1723	19,200
Royal Prince	May 1723	Aug 1724	49,700
Royal George	Feb 1724	Dec 1724	(30,800)
Prince Frederick	Aug 1725	Apr 1730	(45,000)
war: Mar 1727 - Nov 1729			
Prince William	Nov 1730	Sep 1731	32,600
Royal Caroline	Oct 1732	Jan 1734	72,800
war: Oct 1739 - Oct 1748			

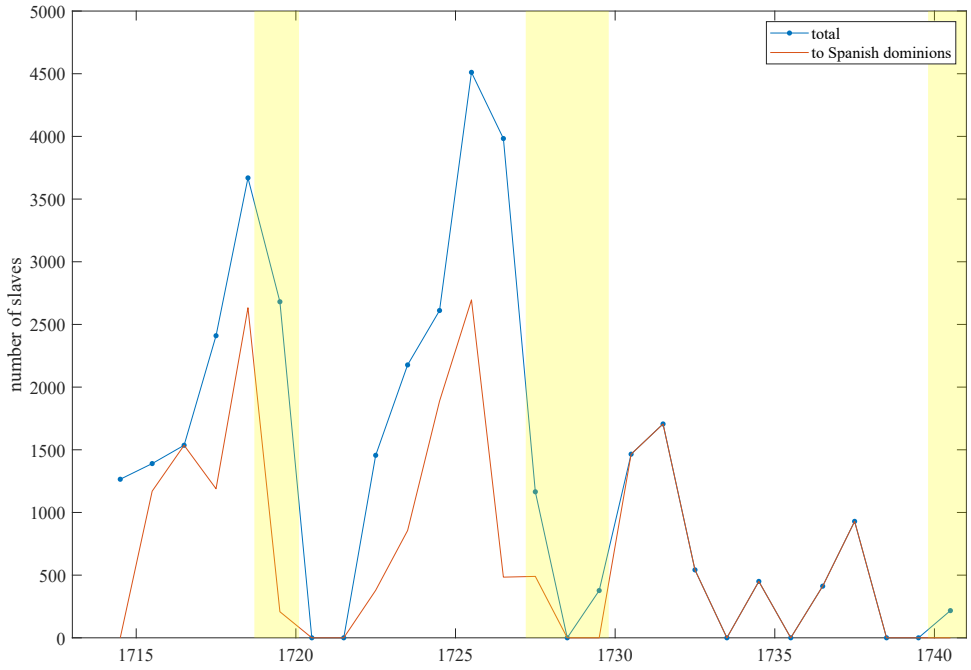
Table 2: Goods-carrying ships sent by the South Sea Company. Sources: Sorsby (1975) and newspaper notices.

The Company started the slave trade earlier: by 1714 the Company had lined up ten ships for a capacity of 3900 slaves, the first of which left England in November 1713.[15] The first four left for British colonies (principally Jamaica and Barbados) which served as depots for slaves, but also as final destinations: of course, in this market the Company had no monopoly, but it could continue to trade there while war interrupted the slave trade with Spanish America.

During the 1714–18 period the Company imported 12,000 slaves to Spanish America, either directly from Africa or from the slave markets in the British Caribbean. The numbers for the 1721–27 and 1729–40 periods are 20,000 and 31,000 respectively, for an average of 3,200 per year of trading, or exactly two thirds of the permitted quota (Sorsby 1975, 279, 337, 367).

[14] The loss on the *Prince Frederick*'s voyage was due to the confiscation of its cargo which was returned after the war, much depreciated.

[15] BL, Add mss 25,495, 260v. The ships are also recorded in the *Voyages* database.



For the period 1714–18, the average sale price, net of local expenses, was £48. If we deduct £6.75 for the average cost of transport (Sorsby 1975, 259) and £7.5 for the tax, that leaves about £34 per slave, or £168,000 annually at the full annual quota, or £100,000 in practice. Under the optimistic assumption that a cargo ship would be sent every year and reach the maximum observed profit of £80,000, the trading privilege would have brought in at most £250,000 or 2.5% on a £10m capital, in addition to the Exchequer annuity. In practice it brought in at most 1%, ignoring all fixed costs (building ships, setting up and maintaining the factories in Spanish America, etc).

2.4 The South Sea's financing in the early years

The government annuity

The main cash flow, initially, was the Exchequer annuity. In addition, the Company was allowed to issue bonds of maturity no less than six months to protect the Bank of England's privilege (9 Anne c. 21, s. 43).

The annuity, 6% of the nominal capital plus £8,000 in management fees, began running from the first quarter of 1712, payable weekly out of available money. But the taxes assigned to the South Sea's fund[16] had already been assigned until 1716 by the previous general mortgage acts. In the meantime, the Treasurer of the Navy was to pay out of funds on hand or by borrowing, and Parliament was to make good the deficiencies in its annual supply bills. Thus, although the Act provided that the tax revenues should be paid out to the South Sea Company weekly as they came in, in practice the Company had to ask the Treasurer of the Navy at the end of every quarter for the complement, and until the tax revenues were freed in 1716 the deficiency was nearly the entire amount due.

[16]They were: duties on wines, vinegar, tobacco, East India goods, wrought silks, whale-fins, etc (which had been extended from 1716 to 1720 by 8 Anne c. 13, now extended forever), duties on rock and rock salt (1 Anne

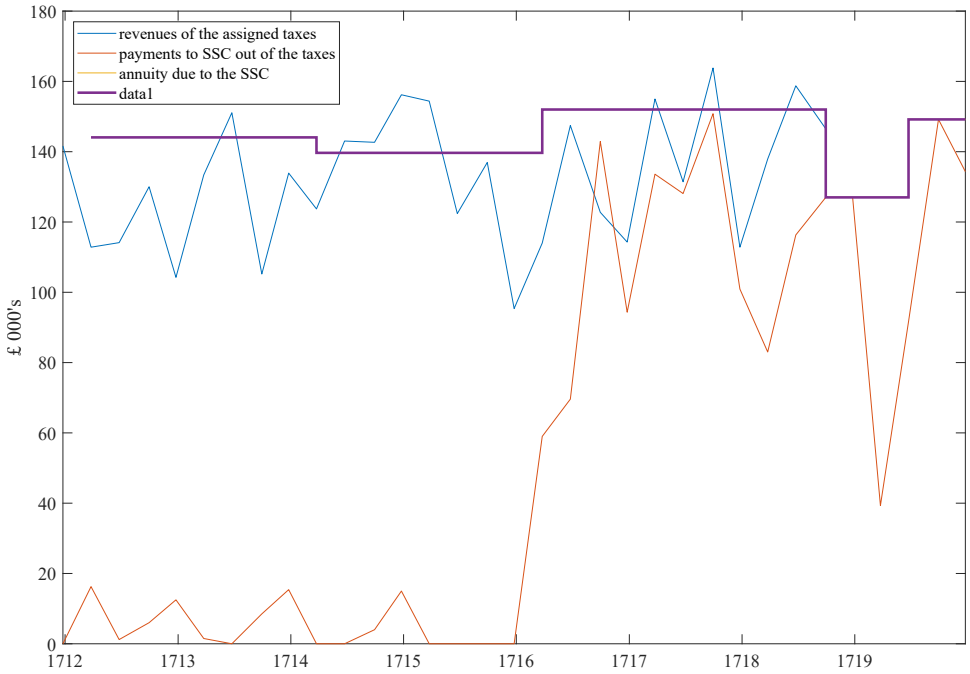


Figure 3: Revenues from the taxes assigned to back the SSC's annuity and payments therefrom to the SSC (1711:Q1–1719:Q4). The thick line indicates the amount owed each quarter. Sources: Revenues from the taxes: CTB 26:xxviii-lii, CTB 27:xxxi-liv, CTB 28:xxxix-liii, CTB 29:xxvii-lii, CTB 30:xxviii-lvi, CTB 31:xlii-lxvii, CTB 32:xxxv-lix. Payments to the SSC out of the taxes: CTB 26:240, 350, 475; 27:72, 193, 271, 375; 28:83, 254, 334; 29:127, 333; 30:219, 359, 510; 31:295, 239 414, 613; 32:129, 313, 428; BL add ms 25,498 f132r; TNA T53/27, 334, 395; T53/28, 47, 48.

Even after 1716, the Company never had a reliable weekly source of funds, as the tax revenues were never sufficient until 1719. Figure 3 shows that the tax revenues were not only variable but also insufficient to back the quarterly annuity (the average over the period 1712–18 is £132,350). Every quarter the Treasury had to send a warrant to the Treasurer of the Navy instructing him how to pay the deficiency out of money and securities in his hands, and even that process could be slow and the company had to press the Treasury for payment.[17]

The payment was occasionally in cash, but mostly in Exchequer bills (redeemable on demand at the Bank of England) or in short-term government bonds (tallies payable from future tax revenues, usually within a year). Sometimes, however, the Company was paid in its own stock. Figure 4 shows how, and how late, the Company was paid. It also shows that the Company was not the worst treated of government creditors: holders of tickets in the 1710 lottery were owed a 32-year annuity payable every year (for blanks earning £0.7 annually) or semi-annually (for the benefits of various sizes). By early 1719 the government was sixteen months late in paying these bondholders.

st. 2 c. 13), and duties on candles and apprentices (8 Anne c. 9, extended from 1715 forever).

[17] 31 Dec 1712, the Lord High Treasurer is asked for payment of the annuity; 22 Jul 1713, the Committee of Treasury is asked to do "all things necessary for obtaining" the annuity from the Treasurer of the Navy; 26 May 1714, the Lord High Treasurer is asked for payment of the deficiency due since March as the Company is "extremely prest for large sums of money"; 23 Jul 1714, the company still hasn't been paid the deficiencies due on March and June; 1 Jun 1715, the Lords of Treasury are prayed for payment of the annuity due at March 25 last (Add mss 25,559, 14r; Add ms 25,495, 70r; Add mss 25,559, 27r, 31r, 33v; Add mss 25,496, 36v).

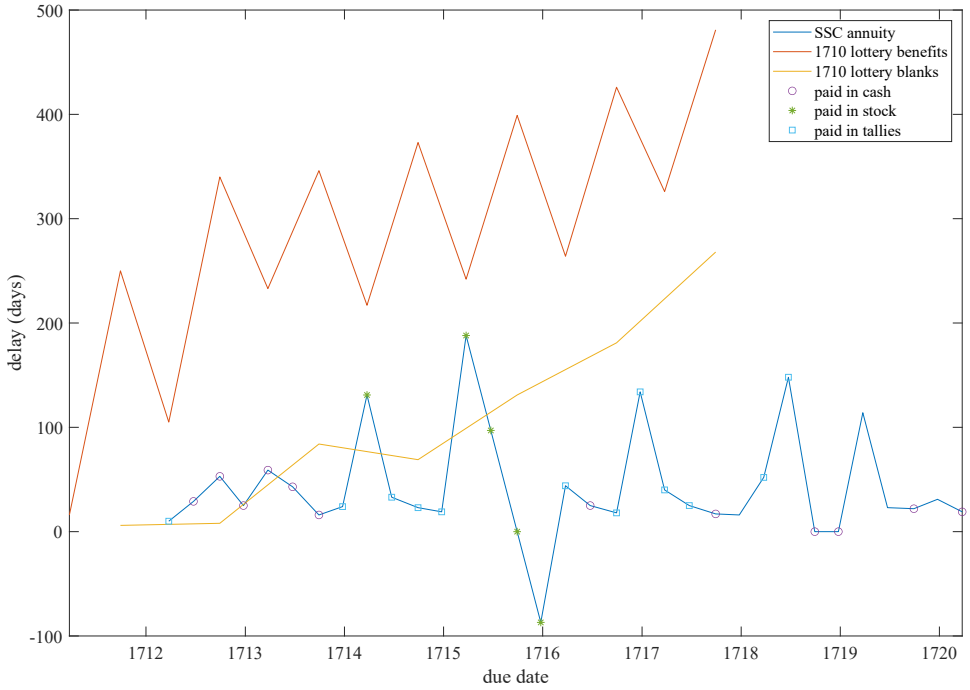


Figure 4: British punctuality: delay on the payment of the South Sea Company's annuity and on debts of the 1710 lottery (delay in the start of payments). Sources: as in Figure 3 for the SSC annuity, *Course of the Exchange* for payments on the lottery 1710.

The deficiency of 1714:Q1 was paid, four months late, in stock owned by the government. In June 1715 the Treasury, already three months late on the 1715:Q1 payment, asked to pay the Company's annuity for the whole year 1715 with an increase in its stock. The Company accepted and this transaction is described in the next section. However, when Treasury proposed in April 1716 to pay the 1716:Q1 annuity out of the government's stock, the Company refused.[18] In January 1717, when the Company asked for payment, the Treasury proposed to delay payment by three months at 4% interest, which the company accepted. It was paid only in May, with 4% tallies, and the interest was not paid until August 1718. In January 1718 the Company was forced to accept 4% annuities for the deficiency because Treasury had nothing else to offer.[19]

By the third quarter of 1718 the situation improved, because the Company's annuity had been reduced from 6% to 5% (as described below). But the first half of 1719 was again difficult, because the taxes were not yet completely free. Tallies on the sixth general mortgage not subscribed into the South Sea stock in 1711 were still senior to the SSC, and the outstanding amounts were being redeemed.[20] The Treasury paid the deficiencies of 1719 by deducting them from the money owed by the Company under the 1719 subscription plan (described below).

[18] BL Add 25,496, 108v.

[19] BL Add mss 25,497, 4r, 98r; CTB 32:129, 681, 31:3; TNA T53/27, 85.

[20] There were still £289,076 outstanding in November 1716 (TNA T1/201, 10), and £160,000 in January 1719 due to be redeemed (BL Add mss 25,559, 88r).

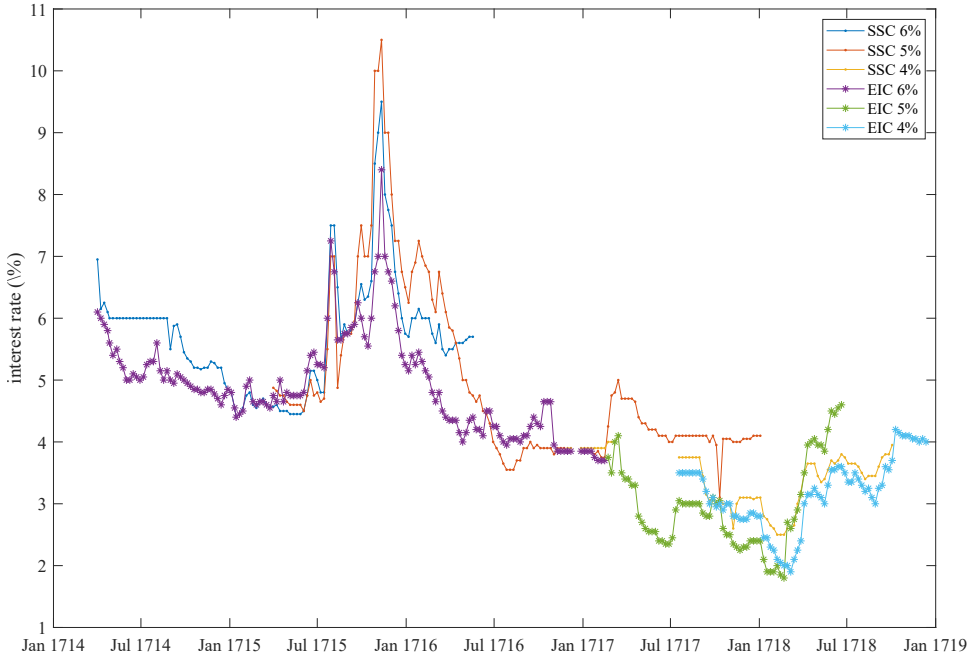


Figure 5: Market rates on SSC bonds. Sources: *British Mercury*, *Weekly Packet*, *Course of the Exchange*.

Dividend policy

The dividend was payable semi-annually in June and December. The procedure, adopted from the Bank of England, was to close the books where stock holdings were registered and manually write dividend warrants, addressed to the Company accountant, for each stockholder. The dividends were due on March 25 and December 25, but the books remained closed for five or six weeks and the warrants issued in the last week of February and August.

From 1712:H1 to 1719:H2 the dividend was 3%, even after the reduction of the Company's annuity in 1717 (see below). A general court in December 1718 voted to maintain it at 3% for the next three half-years (Anderson 1787, 3:87).

This dividend policy meant that the whole cash flow of the Exchequer annuity (and, from 1718, more than that) was passed on to shareholders every six months. Moreover, as shown above, the annuity cash flow was, during the first years, paid quarterly and often late.

Borrowing on the market and from the Bank of England

The Company's source of funds: bonds and borrowing from the Bank of England.

2.5 The 1715 enlargement of the South Sea's stock

modify the chronology using TNA T1/2131, 130–31 and CUL, Ch(H), papers 88, 9.

The first enlargement of the stock was a way for the government to borrow more money, including to pay what it owed to the Company. As noted above, the Exchequer failed to meet its March 1715 payment to the Company. However, based on the first two

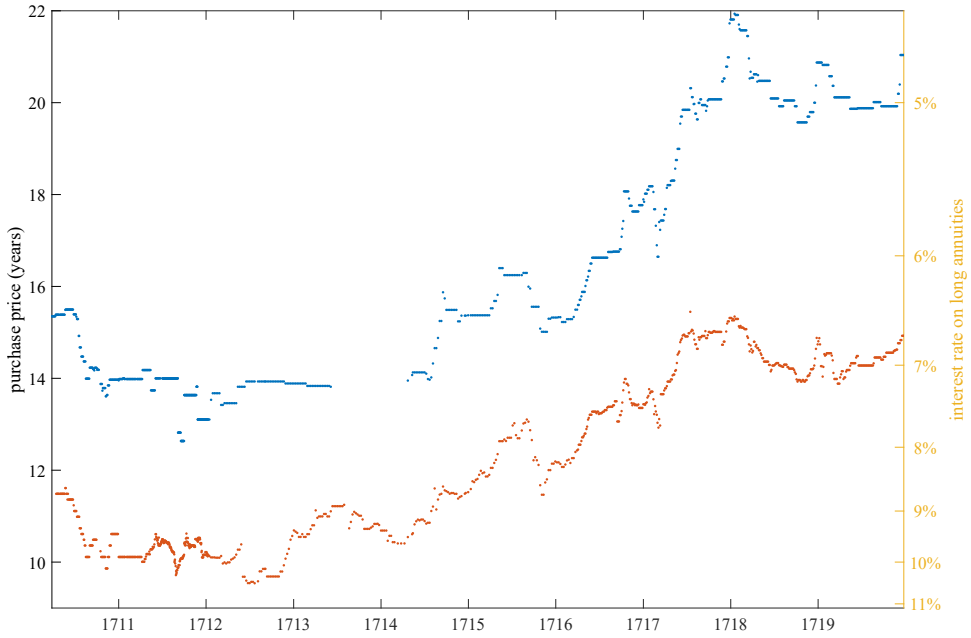


Figure 6: Market prices of long and short annuities, expressed in years' purchase (March 1710–December 1719). The right-hand scale translates the long annuities into interest rates as $r = 1/p$. Sources: *British Mercury*, *Course of the Exchange*.

quarters of the 1715 fiscal year, Treasury estimated that the yield of the taxes assigned to the Company's annuity was £597,000, which was £37,000 more than needed. The proposal was to issue more stock against this extra income and use it to pay the current year's annuity and for "public services," like the public money of the 1711 subscription. If the Company took into account the probable increase in revenues in peacetime, it might even be persuaded to raise the total stock at a round £10m.[21]

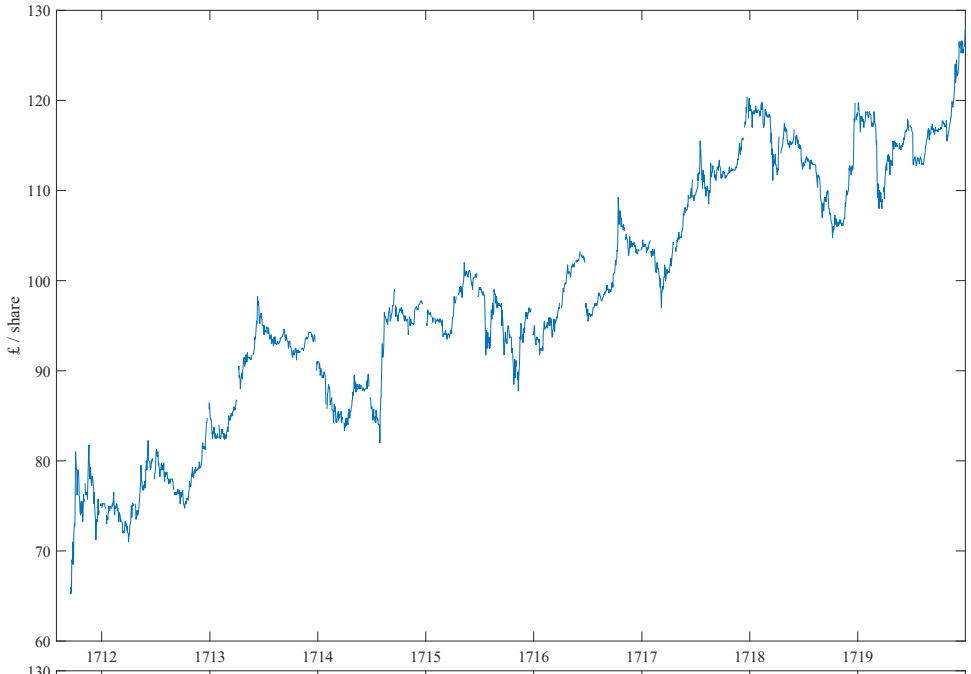
Treasury initially wanted the increase in the annuity to be at 5%, (i.e., to borrow at 5%), but the Treasury's final proposal, delivered to the Company on June 15, 1715, was based on a more realistic 6%. The Company was asked to increase its capital from £9.178m to £10m and receive an increase in the annuity to £600,000. Part of the newly created stock would be given to the Company in lieu of its annuity for the year 1715: that is, the Company would lend the owed payment to the government. The rest would be at the government's disposal "for the use of the public," as in the original subscription of 1711.[22] The stock price at the time was 100 $\frac{3}{8}$ cum dividend of 3% due at the end of the month.

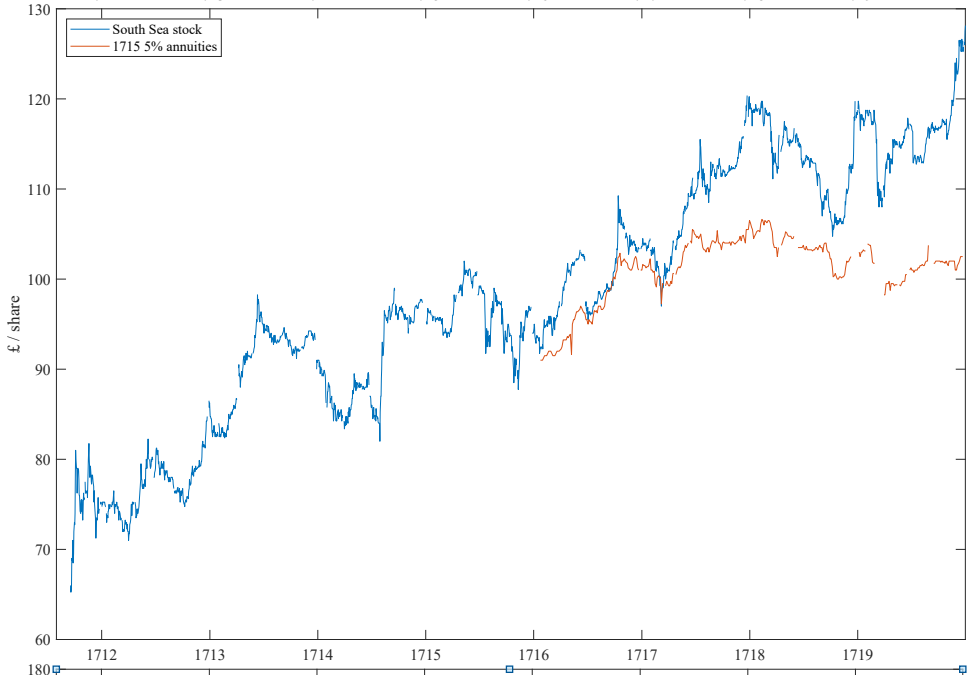
Essentially, the Company was asked to issue equity and acquire (newly issued) government debt. In return for this favor, the Company tried to extract some advantage for itself: the general court called by the directors to discuss the proposal resolved that "a term of time be insisted on for redemption" in exchange for accepting the enlargement. Postponing the possibility of redemption increased the value of the redeemable annuity which was the Company's core asset.

The directors initially asked for 11 years, then for 3 years' notice after December 1720,

[21] CUL Ch(H) Papers 88, 9, unsigned document dated May 27, 1715.

[22] The stock transferred to the Company amounted to £583,339 (half a year's interest on the original capital, and half a year's interest on the increased capital, plus management fees).


£ / share
130
120
110
100
90
80
70
60
1712
1713
1714
1715
1716
1717
1718
1719


South Sea stock
1715 5% annuities
£ / share
130
120
110
100
90
80
70
60
1712
1713
1714
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1716
1717
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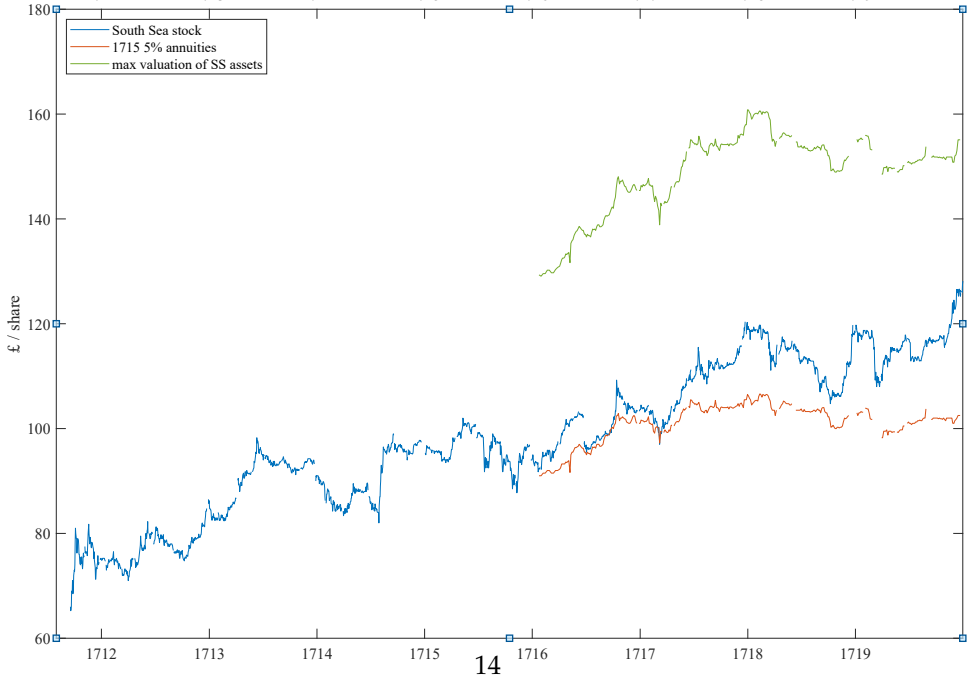
1719


South Sea stock
1715 5% annuities
max valuation of SS assets
£ / share
180
160
140
120
100
80
60
1712
1713
1714
1715
1716
1717
1718
1719

then 1 year's notice after December 1720. It also wanted to sell the new stock itself and deliver cash to Treasury, and insisted on better securities for its annual payment, including a commitment by Parliament to make good the deficiencies prospectively.[23] Treasury told them that the Commons wouldn't accept an extension on the redemption. Another general court on July 29 accepted to abandon that demand. The proposal was sent to the Commons and accepted on the same day, becoming law on September 21.[24]

The Act (1 Geo. 1, st. 2, c. 21, royal assent on September 21, 1715) simply reiterated the earlier provision that the Company's annuity was redeemable at one year's notice at any time after December 1716, in one payment, but that the Company would continue forever. Instead of selling the stock and delivering cash to Treasury, the Company had to accept the government as sole buyer of the new equity at par. Of the stock increase, the Company's portion was kept for a while and ultimately distributed to shareholders as dividends in June and December 1716.[25] The government's portion was sold off from November 1715 to June 1716.[26]

2.6 Restructuring of the national debt (1717–19)

Genesis of the sinking fund plan: Paterson's pamphlet, other projects discussed in PSGB 13, debates in Parliament, the resolutions in Commons of March 23. It seems Paterson wanted to repay the NPV of the irredeemables at either 5 or 6% (Bannister 1859, 2:111). Others proposed the French method. Story of Innocent XI redeeming the debt in Rome.

The 1717 plan

The war with France ended in 1713 with the Utrecht treaty.

At home the political situation had changed. At the death of Queen Anne in 1714, the throne passed over Catholic claimants to a German prince, the Elector George of Hanover, by virtue of an Act of 1706. The new king chose a cabinet of Whigs. Defining political parties at the time is difficult. The traditional distinction between Whigs defending personal liberties and the power of Parliament, and Tories supporting (Anglican) Church and Throne, is far from absolute, or helpful. Both sides were cleft by personal factions; some Tories were Jacobites pining for the restoration of the Stuart dynasty (although they understood how unlikely it was as long as the Stuart pretender remained Catholic). But for understanding the politics at play here, the relevant division is between the "landed interest" and the "monied interest," or more broadly between creditors and (politically

[23] The South Sea's proposal is in TNA T1/231, 130–31.

[24] BL add ms 25,496: 41r, 45r, 48v, 49v, 50r, 53r, 57v, 58v, 59v; *Political State of Great Britain* (herafter PSGB) 10:96, 172, 316. The Company's

[25] BL, Add mss 25,498, 118v (16 May 1716) and 142v (25 Jul 1716).

[26] The government's portion (£238,693) was subscribed by the Treasurer of the Navy, and £66,893 was sold in November 1715 (CTB 29:823, 836). In April 1716 the Treasury proposed to pay what it owed of the last quarter's Exchequer annuity payment in stock. The court of Directors initially agreed and even offered to buy the rest of the government's stock at par in three months; Treasury countered with a promise to sell in three months at the current price. After a few days the directors retracted their offer for lack of liquidity; the government sold off its remaining stock in May and June 1716 (BL add ms 25,496 108v-111r; CTB 30:17, 25, 228).

influent) taxpayers. This division came to the fore in one major question after the end of the war: How to reduce the burden of the debt?

The preeminent member of the ministry who worked on the matter was Robert Walpole, at the time Chancellor of the Exchequer and First Lord of the Treasury. The ministry was divided by personal loyalties, with the earl of Sunderland and James Stanhope on one side, Walpole and his brother-in-law Townshend on the other. Nevertheless, Walpole got to work on a plan to reduce the debt burden.

The government publicly announced its intention to tackle the problem in the King's speech on the reopening of Parliament after a recess on 22 Feb 1717 (HCJ xiv:473). In his address to the Commons, he said:

> you are all sensible of the insupportable weight of the National Debts, which the Publick became engaged for, from the necessity of the times, the pressures of a long and expensive war, and the languishing state of publick credit; but the scene being now so happily changed, if no new disturbances shall plunge us again into streights and difficulties, the general expectation seems to require of you that you should turn your thoughts towards some method of extricating yourselves by reducing, by degrees, the debts of the Nation.

The Commons responded that "they were all but too sensible of the unsupportable weight of the National Debts" and would look for "the most effectual means of preserving to the publick funds a real and certain security."

These ambiguous statements caused alarm on the market, where some prticipants feared a "cutting off" and others talked of a "modified sponge" (PSGB 13:260). Anxieties were heightened by the near-simultaneous publications of a number of pamphlets. The lengthiest and most discussed, by the Scotsman William Paterson, one of the founders of the Bank of England, advocated a conversion of all debts into 4% redeemables, and proposed to "abate" the irredeemables because of the high returns they had provided to investors. The book took the literary form of the proceedings of a debating club, allowing the author to express a range of opinions and present many of the key arguments.

Among the themes found in this piece and other pamphlets (PSGB 13:261:321) are the unfairness of "land taxed and funds exempt": being both assets and source of income, they should both be taxed for the common good, not one taxed for the other. Another argument was that the high rates of return earned by the irredeemables had more than paid off the initial capital. It was also claimed that lowering the general rate of interest (as a consequence of reducing government indebtedness) would be beneficial for the economy and boost the value of monied men's other assets. The reputational costs were not considered much by those who advocated compulsory reductions, especially since they often thought of government debt as a bad idea to begin with. Finally, the competitors on the international stage (France and the Netherlands) had already reduced their debt burdens, by outright reductions in interest rates (France) or by taxing bonds (the Netherlands).

Besides, English history offered precedents, namely the so-called Bankers Moiety.[27]

From a legal perspective, the question hinged on whether Parliament was bound to the terms of a contract like any private party, or whether it had sovereign power to change its own laws? It might seem that the Glorious Revolution had merely replaced the sovereign's discretion with that of Parliament (composed, to be sure, of the sovereign and both houses). But the legal supremacy of Parliament, and its inability to bind itself in the future, was undoubted.

The question of default was therefore on the table when discussions began in Parliament on March 5. At once the former solicitor general Nicholas Lechmere referred to the market's anxieties and moved to dispel doubts by passing a resolution "effectually to make good all parliamentary engagements." The ministry was caught by surprise and Walpole succeeded in modifying the resolution to a much more ambiguous promise to "make good the deficiencies of all parliamentary engagements" (PSGB 13:323). The same day a loan at 4% interest was voted which failed miserably: Walpole blamed a market conspiracy to block his projects, conveniently placing himself as a victim of the money interests. Lechmere was not satisfied and brought up explicitly the treatment of the irredeemables a few days later: in his opinion they "could not be meddled with without breaking in upon Parliamentary Engagements, and violating the Publick Faith." Walpole was quick to answer that there would be no use of compulsion with the irredeemables, and that for the redeemables "nothing should be proposed that should not entirely consist with justice and Publick Faith" (PSGB 13:332–33).

After these skirmishes the debate began in earnest on March 16 with the presentation of an official state of the public debt (Table 3) and continued for a week. Walpole unveiled his plans and guided Parliament toward a set of resolutions that embodied it. [28]

Walpole's general arguments to the Commons drew artfully on the recent polemics.[29] First, feasibility was an issue: a debt so great "may be thought insupportable if not reduced." Second, the time was right: the debt had been "increased from necessity and low credit" and had "to be eased in good times and high credit." Third, other nations were doing the same, but "the example is to be followed though not in the manner." British debt was tax exempt "by contract; if taxed the mischief is not cured" but the imbalance could not be ignored between land that earns 4% and paid for everything and funds (government debt) that earn up to 9% but contributed nothing. Reducing interest payment on the debt would reduce this imbalance, both mechanically and by crowding-in: "if fonds are reduced the money must go into trade or land." It seems, then, that Walpole thought that reducing the debt burden was not only good policy but a way to prevent worse policy as well.

[27] This debt, left over from the default of 1672, was settled in 1704 with a 6% annuity redeemable upon payment of only half of the principal, hence the name.

[28] Walpole's papers contain two undated plans (first plan: CUL CH(H) Papers 49, 1a/16, a sketch in Walpole's hand and Papers 64, 10/7, a clean copy; second plan: Papers 64, 10/8 [= 10/33a]). They are accompanied by calculations based on the March 14 account of the debt (Papers 64, 10/22 and 23, dated March 18 and 21) and corrections after the Commons' resolutions (Papers 64, 10/24) and additional calculations (Papers 64, 10/25 to 28).

[29] CUL Ch(H) Papers 49, 1a/16.

	extinction	rate	annual charge	capital
Monied companies				
East India	after Mar 1736	5%	160,000	3,200,000
South Sea	1 yr notice	6%	608,000	10,000,000
Bank of England				
original annuity	after Aug 1743	6%	100,000	1,600,000
1708 annuity	1 yr notice	6%	106,502	1,775,028
Exchequer bills	after bills below £1.9m		328,562	4,561,025
total monied companies			1,303,064	21,136,053
publicly held				
irredeemables				
life annuities			27,973	
annuities 1692, 1694	1792 to 1794		140,530	
annuities 1704–08	1803 to 1807		527,176	
annuities 1710	1742		81,000	
lottery 1710	1742		135,000	
total irredeemables			911,679	*15,608,801*
redeemables				
lotteries 1711–12	1743 to 1744	6%	657,676	8,762,625
lottery 1713	1745	4%	35,000	599,190
lottery 1714 blanks	1746	5%	116,574	1,117,694
lottery 1714 prizes	1746	4%		694,406
bank annuities		5%	54,600	1,069,000
Bankers debt		6%	39,856	664,263
total redeemables			903,705	12,907,178
total publicly held			1,815,384	
total			3,118,448	49,652,032

Table 3: National Debt, March 1717. Source: HCJ 18:498-507. The capital of the irredeemables is computed at the market prices of 5 Feb 1717.

The basic idea was to maintain or increase taxes as required, refinance the redeemable debt, offer attractive terms to the holders of irredeemable debt, and use the resulting decrease in debt service (holding taxes and spending constant) to repurchase the debt over time. With the power of compound interest at work, Walpole thought it possible to repay the debt in a few decades.

In practice Walpole proposed to redeem what could be redeemed that bore an interest above 5%: with market rates around 5% (but not 4%, as the failure of the loan proved), the option to redeem was in the money. Debt-holders would be given a limited opportunity to convert their debt into 5% redeemable annuities of the type issued in 1715 (transferable at the Bank of England), or else receive the cash. Holders of irredeemable debt would be offered an option to convert into redeemable debt, without compulsion. The resulting savings (holding taxes constant) would be used to reduce the debt over time through a sinking fund (described below) and push wealth into more productive uses.

What was redeemable

Which parts of the debt could be redeemed? Table 3 distinguishes between the debt held by the "monied companies" (the EIC, the SSC, and the Bank of England) and that held by the public, the latter divided into redeemables (with the face value at which they could be redeemed) and the irredeemables (with their market value as of February 1717).

The debt to the EIC was at 5% and could not be touched until 1736. The original fund of the Bank of England was at 6% but protected until 1743. An annuity created in 1708 (to fund outstanding exchequer bills) was redeemable on one year's notice. Finally, the Bank also received a costly annuity to circulate Exchequer bills (I will explain shortly what that means). Whether it was redeemable or not was legally dubious. The South Sea Company, as we saw, failed to extend the protection on its annuity, so it was clearly redeemable and bore more than 5%, as did the lotteries of 1711–12.

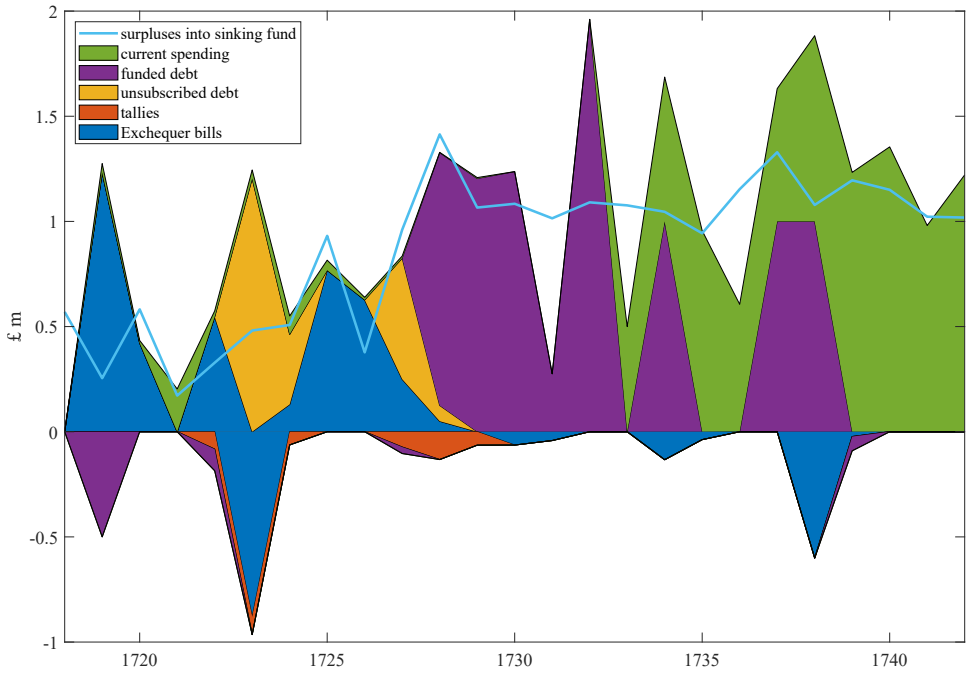
The redeemable debt held by the public was of recent origin. The previous Tory government, in a departure from earlier practice, had ony issued redeemable debt to the public. The series of lotteries issued between 1711 and 1714 promised a repayment and paid interest on the face value until repayment. Repayment was scheduled to take place over the course of 32 years, which was the duration of the taxes assigned to these loans, and debtholders were repaid in a set order, but the exact time of repayment was neither specified nor guaranteed, and in fact the repayments soon fell in arrears (although the interest was paid). But these debts were redeemable, since they had a face value and promised repayment.

The Whig administration continued issuing redeemable perpetuals. The first such loan, in 1715, was the 5% "Bank annuities," so-called because transfers and interest payments were managed by the Bank.[30] It became the prototype of British debt: contrary to the debt payable at the Exchequer it was payable at the Bank, which managed record-keeping. Transfer of ownership in the double-entry ledgers of the Bank was fast and costless. That was the kind of annuities that Walpole wanted to replace the existing redeemables.

The plan required cash on pay off holders of redeemables who refused annuities. Walpole wanted to convert the lotteries of 1711–12 and 1714, a total of £10.6m, and figured that he needed at least £7m on hand. Raising such sums on the market was dangerous, because of "the caprice, humour or combination of particular persons" so Walpole proposed to ask the monied companies to raise the funds. Two could be bribed easily. To the East India Company "some concessions and privileges may be granted to them in point of trade" would ensure a £2m loan while the South Sea Company would readily increase their capital by £2m "for which a further term may be granted them, confined always to a reasonable number of years": that is, extending the term before which the annuity could not be redeemed, Dealing with the Bank of England was more delicate, because of the Exchequer bills business, and a further reason to bribe the first two companies was to enroll them to turn on the third.

Exchequer bills were interest-bearing notes issued by the Exchequer in lieu of cash when making payments (Dickson 1967, 372–79). The current system, working since 1707 with modifications, relied on the Bank of England to support the value of these bills. The Bank committed to cash bills on demand with interest accrued ("make them specie"). For this service the government paid 3% of the amount of bills outstanding and a flat £53,000

[30] 1 Geo I st. 2 c. 19 and c. 21; originally planned at 6%, they were issued at 5%. They are sometimes called by their total amounts, £910,000 and £169,000.



per year. This cost was in addition to the interest, (which it reimbursed to the Bank) of 2d per day or 3% per year. The system had been useful to support the value of the bills during the war but was now expensive, especially since the Bank held more than half of the bills outstanding—why was the Exchequer paying the Bank to cash on sight bills that the public didn't hold? Walpole proposed to lower the overall cost of the bills (interest and making them specie) to 4.5%, but this would deprive the Bank of lucrative business. Moreover the £53,000 fee had been granted for as long as the bills outstanding were above £1.9m. The only legal way to end this was to redeem all outstanding bills at once (£4.5m). Only another monied company could do this, for example the South Sea Company: indeed, Walpole's papers include a detailed plan for how it could entirely replace the Bank in managing the Exchequer bills, and what profit it could derive therefrom.[31]

The logic of the plan

A key element of Walpole's plan was the establishment of a sinking fund.

A sinking fund is an implementation of a particular fiscal policy, whereby primary surpluses are maintained higher than necessary to simply roll over the existing debt, and used to redeem the existing debt over time. As in the case of a mortgage to which a finite stream of constant payments is assigned, the proportion of the surplus that goes to redeeming debt increases exponentially over time, until the debt is extinguished. The effect of such a policy is to shift the burden of existing debt from later generations to earlier generations.

[31]CUL, Ch(H) Papers 88/11 (possibly in Lowndes's hand). The beginning of the document provides an interesting assessment of the Company's financial situation: "As the South Sea Company is a Companby that depend chiefly if not intirely on their annuity out of the Exchequer and their trade is so small and doubtfull as to the profit, and their capitall is already do large that they cannot expect to make any considerable dividend by their trade it may be rather an advantage than prejudice to them to have their capitall stock enlarged and perhaps the larger it is made the better it is for them."

In practice, Walpole's sinking fund consisted in segregating surpluses arising from various funds and dedicating them to the redemption of debt. The various funded loans issued since 1693 had created a variety of funds, tax streams specifically assigned to fund the debts. Walpole aimed to simplify the multiplicity of funds and ensure that the surpluses were committed to debt redemption. An Act of 1715 had already collected a number of tax revenues into the Aggregate Fund, mostly designed to fund the debt of the Bank of England. The creation of the South Sea Company had established another fund, the South Sea Fund. Walpole also intended to collect the taxes backing the redeemable loans of 1711–12 into a General Fund. The surpluses of the three funds (as well as any surpluses from the Civil List fund) were to be segregated in the Exchequer into a Sinking Fund, dedicated to redeem debt issued before 1716. As debt redemption took place, the surpluses would increase, and more money would be available to redeem debt at an exponential rate.[32]

Walpole's plan projected that the debt, under a constant 5% interest rate, would be extinguished within 34 years.[33] Given that the short annuities had remaining terms of less than thirty years, it is hard to see the point of including them into the sinking fund: the burden of the debt was not bearing on future generations. Such was not the case of the 99-year annuities, which were set to expire between 1792 and 1807.

The case for converting redeemables that bore more than 5% interest was plain. The government held an option, and the option was in the money: it made sense to exercise it and reduce the debt burden legally. The resulting fiscal space could be used two ways: to lower taxes now, equating the primary surplus to the debt burden, or to maintain it higher than necessary in order to shift the burden of debt to earlier generations.

For the irredeemable debt, however, the logic isn't clear. Buying out the debtholders at market prices to convert the term annuities to perpetual debt (setting aside the conversion option) provides no savings, as exercising an option does. The constant stream of payments is changed to an initially lower stream but one that ends with a repayment: at market prices, both streams have the same present value. Put another way, the constant stream of payments was self-amortizing: converting to a lower stream followed by a repayment merely distinguishes interest and repayment without making any real difference.

There are two possible explanations for the fallacy of including the irredeemable debts into the sinking fund. One is to presume that the first year's savings only was considered, without factoring in the eventual repayment. The illusory saving disappears if that eventual repayment is taken into account.

The other is to suppose that Walpole did not understand that a redeemable annuity embedded an option that did not come for free.

[32] Distinction with Pitt's sinking fund of 1786.

[33] CUL Ch(H) papers 69, 10/25.

Negotiations and debates

Walpole's plans were formally embodied in a set of resolutions adopted by the Commons on March 23. The only differences with his original proposals were that only the lotteries of 1711–12 would be redeemed (excluding the 1714 lottery), and the terms offered to the owners of irredeemables were changed. Walpole had proposed to offer seventeen years' purchase in 5% annuities or eighteen and a half in 4% annuities for the long-term annuities, and "in proportion" for the short-term (32 years) annuities. The Commons decided to increase the offer price to 17.5 at 5% or 19 at 4% for the long annuities, and 13.5 at 5% or 14.5 at 4% for the short annuities. A committee was appointed to draft the appropriate legislation.

The bill introduced by Walpole on April 10 dealt only with the Bank of England and made explicit provision for possibly turning over the Exchequer bills business to someone else. Under this threat the Bank would concede, and the savings on the cost of the bills would fund either more bills or a loan from the Bank.

The Bank made its objections known in writing. [34] Some were complaints about being treated poorly after providing help "in times of great difficulty"; the violation of existing law was insisted upon. Doubts were expressed that bills could be circulated at 4.5% by them or any other undertaker. Pointing out that the Bank held many bills, veiled threats were made to place "very great demands on the undertakers such that they may not be well able to stand." The Bank was also displeased by Walpole's plans to issue more bills because "the more exchequer bills are current carrying interest the fewer cash notes of the Bank will be current without interest."

At this point political events interrupted the proceedings. The split within the Whig ministry broke out into the open, and Walpole's brother-in-law was dismissed—Walpole resigned immediately, on April 9, and when he introduced his bill on the Bank of England he did so as a "country gentleman," that is, a back-bencher. Lord Stanhope succeeded him as First Lord of the Treasury, and Parliament adjourned a few days later for the Easter recess. When Parliament reconvened the King's speech urged the Commons "to take all proper methods for reducing the publick debts, with a just regard to Parliamentary credit," confirming the government's intent to avoid default. When Walpole moved a second reading of his bill Stanhope intervened to say that it needed "to be amended and rectified." Now official negotiations began with the Bank and the South Sea Company.

It is useful to view the negotiations as taking place between three parties, the companies and the government. But directors of both companies sat in Parliament (the law explicitly stated that there was no incompatibility), which meant that the two companies were well informed of the debates and could intervene.

Include the projects for SSC circulating Exchequer bills, CUL Ch(H) 88: 11, 13, 13a.

On May 7, 1717 the Treasury approached the South Sea Company with the draft of a bill to lower the Company's annuity from 6% to 5% "and other purposes." The government wanted to lower the rate, but also needed funds for to pay off dissentients in its other

[34] CUL Ch(H) Papers 64, 10/3: "Observations on the behalf of the bank upon the bill for the redemption of their annuity of 6%."

redemption operations. After some negotiation Stanhope amended the draft, taking up the Company's offer of a £2m loan and providing a modest additional security for their annuity (the tax funds made available by the reduction on redeemable debts would be assigned to the Company's annuity). The sticking point was the Company's demand for an extended protection against redemption, whose duration was left blank in Stanhope's draft. The directors first decided to ask for eleven years, then ten years, and finally settled for eight years. A general court on May 16 approved the proposal which was sent to the House of Commons on May 20, at the same time as the Bank of England's proposal.[35]

There ensued in the Commons a lively debate between the "monied interest" and the "landed interest" (debtors or taxpayers), the desire to reduce the public debts against the need to preserve "parliamentary faith." The member and merchant John Hopkins darkly noted "what had been suggested by some People without, that the interest of the public funds might be reduced at once by an Act of Parliament ; but that he hoped, no such thing was ever intended by any that sat in that House; for, in his opinion, it could not be done without violating the Parliamentary Faith, and giving a dangerous wound to public credit." Yet a number of members found that the monied companies, which "to make themselves popular, boasted of their zeal for the present government, should on this occasion have given more convincing proofs of it by contributing more than they offered to do, towards reducing the public debts and easing the landed men who for so many years have born the greatest part of the national burdens." They found the proposals unsatisfactory and wanted to wait for better ones; others argued that the gain was worth taking (Lowndes) and that the affair should not be delayed (Bladen). Some wanted no term on redemption, others accepted one year (Hungerford) or three (Pulteney); Aislabie, the new Chancellor of the Exchequer, proposed six years and a year's notice for the South Sea, which was carried without dividing (i.e., with a clear enough majority for a voice vote).[36] When the bill was drafted on June 6, however, the Commons added a clause to allow partial repayments in sums of £1m or more, and the Company's general court acquiesced on the advice of their directors. The Company also consented to provide a loan of £2m at 5%, if required, for the purposes of debt redemption.

The Bank of England's proposals were also debated. The Bank mostly acceded to the demands of Walpole, but tried to save as much as it could. They were willing to lower the 1708 annuity to 5% from March 1718 but asked that it be irredeemable until 1723: they were allowed to continue at 6% until June 1718 but only got a year's notice after that date. On the Exchequer bills they accepted to deliver £2m in their hands for a 5% annuity but irredeemable until 1720: they only obtained a year's notice after December 1717. On the remaining bills they obtained to continue the 3% payment to make them specie, but the Commons made explicit that this annuity was redeemable on a year's notice after September 1717. The interest on the bills was lowered to 1d per day (1/5% per annum), and the Bank obtained that the quantity could not be increased without their consent. They also offered to lend £2.5m if required at 5% for the purposes of debt redemption.*tax*

[35]BL add ms 25,497, 29r-32v, 34v, 41v.

[36]PSGB 13:574–88. The new term for redemption was one year's notice after 24 Jun 1723.

privileges.

The implementation

The two Acts dealing with the monied companies were completed by a third dealing with debt redemption.[37]

Here was the most substantial departure from Walpole's plan: the irredeemables were left aside, and only the redeemable lotteries of 1711–12 were called in, as well as an old annuity arising from the 1672 Stop of the Exchequer (the "Bankers Moiety"). Holders of tickets (i.e., bonds), which carried 6% interest, were obliged to accept their capital in cash, but were offered the possibility of receiving it in 5% annuities at par, redeemable at any time in increments of £0.5m or more, easily transferable at the Bank of England like the so-called Bank Annuities of 1715.[38] The other two Acts had secured loans from the Bank and the South Sea Company to pay off those who refused conversion (the "dissentients"), but there were none, and the Company's stock remained at £10m.

It's not clear why the 1714 lottery and the irredeemables were dropped from the plan. Pulteney (1735, 18–21) later claimed that it was due to the market scare, but that doesn't seem right—the market was indeed spooked in late February, but recovered once it became clear that default was off the table. The most likely explanation is that the resources gathered (£4.5m in potential loans from the monied companies to pay off dissentients) must have seemed insufficient.

The Act also began to rationalize the system of funds assigned for specific expenses, but only as far as debts were concerned. The Act of 1715 had already created an Aggregate Fund, whose main purpose was to collect funding streams for the Bank of England's revenues (except the original annuity of 1694). As the irredeemables were sufficiently funded, their surpluses were sent to the Aggregate Fund. Other items were also charged on the Aggregate Fund, notably part of the Civil List expenditures, but still left some revenues. The South Sea Company had its own fund, precarious as we saw, but surpluses were more likely now that the South Sea's annuity had been reduced. Finally, the lotteries which had been converted into standard redeemables also had funds assigned to them, and they were gathered into a General Fund.[39] The surpluses of the three funds (Aggregate, South Sea, and General) were now allocated to a Sinking Fund whose purpose was to redeem debt issued before December 1716. Debt redemptions would lead to increased surpluses flowing into the Sinking Fund and therefore speed the debt redemption.

In effect, the Sinking Fund was a complicate mechanism to gather various surpluses of taxes assigned to debts. As explained above, however, the overall budgetary balance depended on the spending and appropriation choices made by the Supply and Ways and

[37] The Acts (3 Geo I c. 7 for the debt, 3 Geo I c. 8 for the Bank of England, and 3 Geo c. 9 for the South Sea Company) received royal assent on July 15, 1717.

[38] The Act also authorized the issue of 4% annuities to pay off floating debt. The new annuities came to be known as the Lottery Annuities. Further issues of redeemable annuities took place in 1718, at 4%, and in 1719 at 5%, to pay off army debentures and the Navy treasurer's deficit for 1718, caused by his payment of the South Sea Company's annuity (4 Geo I c. 10 and 5 Geo I c. 1).

[39] Bizarrely, the Act decided that the General Fund should amount to a fixed sum every year. In practice the fund was sufficient to pay for the lotteries of 1711–12 but never reached the amount set by the Act. Therefore, every year the supplies bill had to appropriate additional funds to make up the arbitrary deficiency

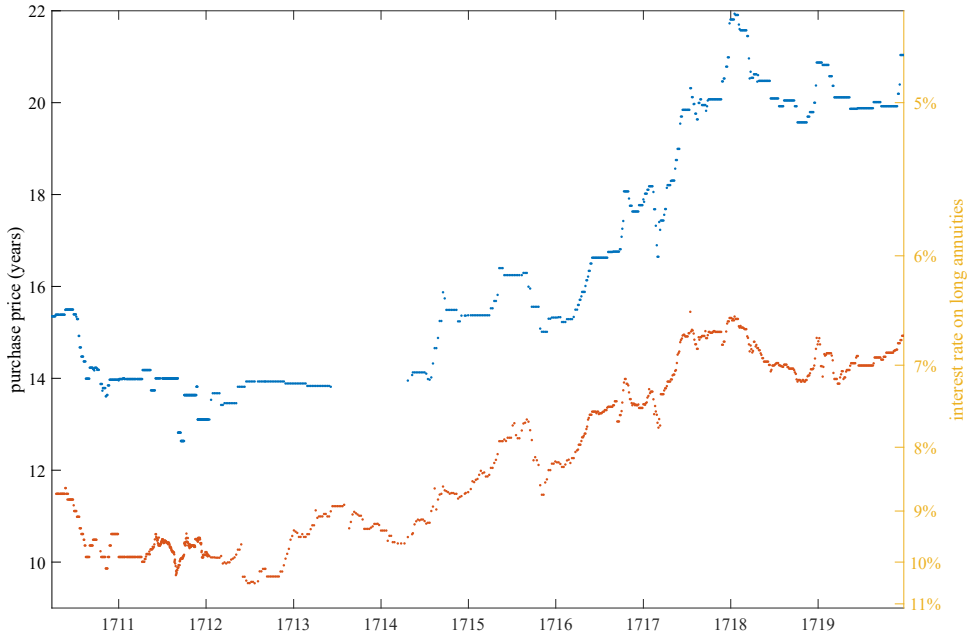


Figure 7: Market prices of long and short annuities, expressed in years' purchase (March 1710–December 1719). The right-hand scale translates the long annuities into interest rates as $r = 1/p$. Sources: *British Mercury*, *Course of the Exchange*.

Means committees. The surpluses feeding into the Sinking Fund were only surpluses of a subset of taxes relative to a subset of spending, not an overall surplus of taxes relative to spending (inclusive of debt service). It is also important to note that the "fund" was nothing more than a segregation of Exchequer balances, and although the Act specified that it should be used first to retire debt issued before December 1716, Parliament was always free to deviate from that rule.

Years later the sinking fund became a stick with which to beat on Walpole. Walpole's former ally and rival William Pulteney published a pamphlet (Pulteney 1734) which attacked Walpole for diverting part of the sinking fund from its original purpose of redeeming debts incurred before December 1716. The response of Walpole (1735) was correct in narrow legal terms: the acts as written did not try to tie the hands of future Parliaments, nor could they have; and the issue of redeemable annuities included a put option for the government, not for the creditors. Pulteney (1735, 26) retorted that "the whole was understood between them [the public and the creditors] ... and no express stipulation for so doing was necessary to be inserted in the Act, since it was manifestly the intention of all sides."

2.7 The 1719 operation: a dress rehearsal

The 1710 lottery

The lottery loan of 1710, also called or the £1.5m adventure (8 Anne c. 4) was the most recent irredeemable debt, along with the 9% annuities of the same year. At the time of issue, a lottery determined the size of the 32-year annuities, most (the blanks) receiving a £0.7 annuity payable annually in September starting in 1711, while the lucky tickets (the

end Sept	received	paid out	payer's debt
1711	21,112	15,608	4,231
1712	139,200	131,714	8,599
1713	113,127	108,609	12871
1714	144,898	131,379	10,374
1715	126,298	126,116	20,221
1716	130,825	117,908	19,208
1717	120,151	116,603	22,342
1718	125,538	119,891	

Table 4: Revenue received from the Exchequer by the 1710 lottery's paymaster, sums paid out to annuity holders, and paymaster's debt. The annual fund was theoretically £135,000. Sources: CTB 25:cdli, 26:cdxix, 27:cdxvi, 28:cdlx, 29:cdxx, 30:cdxlii, 31:cdiv, 32:cclxxxviii.

benefits) receiving constant annuities of same duration but larger size, and twice yearly from March 1711. In aggregate the blanks received £102,374 and the benefits £32,625, for a total of £135,000.

These annuities had the advantage of being bearer bonds and thus easily traded, but the tax revenues on which they were assigned was insufficient.[40] The taxes were supposed to provide the annual £135,000 as well as £2,400 for the paymaster's office. In practice the revenues, shown in Table 4, averaged £128,600 and payment of the annuities was increasingly delayed, as shown in Figure 4, reaching five quarters in January 1719. The last column of Table 4 suggests that part of the problem was inefficiency in the paymaster's office.

As of January 16, 1719, the relevant market prices were as follows. The £0.7 annuity, with 25 years to run, was at £9.9 (or 14.15 years' purchase), the benefits were priced at 14 $\frac{3}{8}$ years' purchase, or a weighted average for blanks and benefits of 14.2 years' purchase.[41] At the same time 5% redeemable perpetual annuities were at 3% above par, 4% redeemable annuities were at 4.75% below par, long (irredeemable annuities) were at 20 $\frac{7}{8}$ years' purchase (or 4.8%), and South Sea stock was at 18% above par.

If the government wished to purchase the 1710 lottery annuities at market price, it needed to pay 14.2 for each £1 annuity. Again at market prices, it could do so by issuing 5% perpetual annuities with an annual cost of £0.69, or perpetual 4% annuities for an annual cost of £0.60. As discussed earlier, both annual charges are lower than £1 but the savings are illusory: the 32-year annuities were self-amortizing whereas the redeemable perpetuals were not. In the short-term the costs were lowered, but they were raised in the long-term, and by definition netted to zero in present value.

Now suppose that the South Sea Company were to issue stock and buy out the annuitants. At market price it would need to issue £12.08 in stock. Once in possession of the whole lottery annuity it could bargain with the government for an addition to its annuity in exchange for the lottery annuity: any offer lower than $0.69/12.08 = 5.7\%$ would have been to the advantage of the government.

[40] The taxes were duties on coal for 32 years from September 1710 to September 1742.

[41] The slight discrepancy in prices is explained by the fact that the benefits, paid semi-annually, had 25 $\frac{1}{2}$ years to run.

The government's proposal

When the government approached the Company officially on January 27, 1719, it proposed that the Company issue a round £2.5m stock, for two purposes. The first was to buy out the 1710 lottery annuitants by offering 12.75 years purchase in South Sea stock. Counting the stock at 17.5% above par, this was the equivalent of 15 years in cash, about 6% above market price.[42] The second was to make a cash loan to the government. In exchange, the government would increase the Company's annuity and management fees in proportion, that is, by 25%, and add the taxes that backed the 1710 lottery to the Company's fund.

The government added a few sweeteners. It knew that it would not be able to make the full March payment on the Company's annuity, because of the tallies that were senior to the Company. It estimated that £100,000 would be missing and would not be paid until September, most likely in 4% annuities at face value (at a 4% loss over cash). The deficiency would be deducted from the Company's cash payment, thus saving £7,750 in interest costs (interest until September and the 4% loss). This, of course, was not much of a real gain for the Company: the government threatening a late payment to make an on-time payment (in the form of a 5% annuity rather than cash) look advantageous.

The government also accepted that the cash payment be made in quarterly installments starting on April 30, while the increase in annuity would accrue from the previous December, making another gain of £24,735. Finally, the government allowed a rebate of £37,500 on the first payment, allowing the Company to pay an extra 0.5% dividend for three semesters on the new stock to be issued.

The 1719 subscription into South Sea stock

The proposal was pushed through swiftly. The court of Directors agreed and added a few clauses, most importantly that the increase in the Company's annuity be redeemable on the same terms as the original annuity. A proposal was drawn up on February 2, and later the same day a motion was made in the House of Commons's ways and means committee along the same lines. The directors hurriedly called a General Court to approve the formal proposal on February 5 and delivered it immediately to the Commons, who accepted within days. Lowndes presented a bill drafted by the directors on March 20 and it received royal assent at the end of the session on April 18.[43]

The subscription of lottery tickets ran from May 4 to June 20. Only 70% of the tickets were subscribed, so that the South Sea Company's own stock issue was reduced proportionately, from £778,750 to £544,142. The Company decided that the best way to dispose of it was by subscription and the directors decided to dispose of £520,000 at a price above

[42]The 12.75 price was decomposed into 1.25 years' arrears to December 1718, and 11.5 years for the 25 remaining years on the annuities. The amount devoted to the lottery annuities was £1,721,250.

[43]BL Add mss 25,498, 86r-92r, 105v; HCJ 19:90–95, 135. The Act (5 Geo. 1, c. 19) combined the first two quarterly payments from the Company into one. It also extended the taxes assigned to the 1710 lottery forever. It did secure to the Company a better provision of future deficiencies, in particular any payment in annuities rather than cash be adjusted for any discount. The Company had asked that its original fund and the 1710 lottery fund be united, but they were kept separate. Walpole also managed to insert a clause that the cash paid by the Company be used to redeem national debts (PSGB 17:206).

stock issued	market value	use	market value	annuity	market value
As planned, Jan 27:					
market prices on Jan 16:					
South Sea stock at 1.175 ,5% annuity at 1.03 , 1710 lottery at 14.20					
1,721,250	2,022,469	1710 lottery	1,916,840	87,440	1,801,254
778,750	778,750	purchase annuity		39,561	814,946
	136,281	cash			136,281
		interest savings			32,484
		rebate			37,500
2,500,000	2,937,500			127,000	2,822,466
company gain:			(115,034)		
government gain:			9,405		
1710 annuitants gain:			105,629		
As executed, May 5 - Jul 2:					
market prices on Jul 2:					
South Sea stock at 1.14 ,5% annuity at 1.02 , 1710 lottery (May 5-Jun 19) at 14.55					
1,202,702	1,371,081	1710 lottery	1,372,075	61,097	1,246,385
544,142	544,142	purchase annuity		27,642	563,905
	76,180	cash			76,180
		interest savings			38,079
		rebate			26,203
1,746,844	1,991,403			88,740	1,950,751
company gain:			(40,651)		
government gain:			41,645		
1710 annuitants gain:			(994)		

Table 5: Decomposition of the 1719 operation, as planned and as executed.

par, the premium payable immediately and the face value in five monthly payments. The price was set at 14% above par and the stock sold out on the first day, July 2.[44]

Assessment

Table 5 presents an accounting of the 1719 operation. The top panel presents the plan of January 27, using January 16 market prices, and assuming that all 1710 lottery annuities were converted. The new stock issue of £2.5m is broken down into its two components. The first row shows the part used to redeem the 1710 lottery, the market value of the latter, the corresponding increase in the Company's annuity, and its value at market prices (assuming that it can be priced with the 5% "Bank" annuity). The second and third row account for the other part of the stock issue, sold to the public, part of whose value was to purchase another increase in the Company's annuity and the rest at the Company's disposal in cash. The last rows account for the interest savings and the £37,500 rebate.

The company's gain is simply the difference between the market value of the new stock issue, and what it gets for it, the sum of the last column. The gain would have been in fact a loss. The government's gain is the change in its balance sheet: the market value of the 1710 lottery annuities and the net cash it receives, less the market value of the increase in the Company's annuity. The annuitants' gain is the difference between what they receive

[44] BL add mss 25,498 123r-125v (24 Jun - 2 Jul 1719) and London Gazette 5742, 5758, 5770.

(stock at market value) and what they give up (annuities at market value).

The government was allowing the Company to issue more equity, something it could not do on its own but only by Act of Parliament. But it constrained its use of the cash raised and forced it to invest most of it in government debt at lower-than-market prices (the 1710 lottery). The deal on the Company's cash payment was better (especially with the sweeteners) but smaller. In effect the government was forcing the Company to pay an above-market price to convince the annuitants to convert.

The lower panel presents the same calculations, but with several differences. First, I use market prices of the lottery annuities during the subscription period and the market price of the South Sea stock on the day of the public subscription. Second, I use the actual amounts of lottery annuities that were subscribed, and the actual timing of the Company's cash payments.

The balance of gains and losses shifts a little. Annuitants neither gained nor lost, which is consistent with the fact that some but not all converted. The balance was between government and company: the Company lost less because its stock price was a little lower and because not all annuitants took up the deal; but the government gained all that the Company lost. The loss, however, was small as it was borne by all stockholders, and amounted to 2%. For the government the gain was 2% on the lottery annuities, because it was able to extract good terms for the annuitants from the Company.

3 The 1720 debt conversion

3.1 The situation in late 1719

Table 6 presents the state of the public debt at the end of the fiscal year 1719, as it was presented to Parliament on Jan 21, 1720.[45] It is organized similarly to 3 but adds another column indicating the sources of funding, and additional rows for debts funded after 1717. The irredeemables had been reduced by the partial conversion of the 1710 lottery into South Sea stock: the corresponding tax stream remained separate. The new funded debt (annuities of 1717 and tallies of 1717 and 1719) were assigned on the general fund, which originally backed the lotteries of 1711–12 redeemed into annuities in 1717.

The funding system was complicated. Tax revenues were assigned to various debts, with surpluses reassigned to other debts or to the general and aggregate funds (and sometimes these funds were assigned to make up deficiencies of particular tax revenues: the aggregate fund supplied the deficiency of the 1714 lottery's fund). All surpluses, however, were eventually funneled into the sinking fund, which by law could only be used to redeem debt issued before December 1716.

The flows into the sinking fund could diverted in two ways: tax revenues could be reassigned from the sinking fund to other expenditures (as happened occasionally in ???, and in ??? when a fund was permanently diverted to fund the civil list) or sums in the

[45] JHC 19:232, but the report is not printed. The Walpole papers have a copy, which is not exempt of mistakes.

	extinction	rate	annual charge	capital	fund
Monied companies					
East India	$>$ Mar 1736	5%	160,000	3,200,000	own
South Sea					
original annuity	1 yr notice	5%	508,000	10,000,000	SSF
1719 annuity	1 yr notice	5%	88,740	1,746,844	lottery 1710
Bank of England					
original annuity	$>$ Aug 1743	6%	100,000	1,600,000	own | AF
1708 annuity	1 yr notice	5%	88,751	1,775,028	own | AF
1717 annuity	1 yr notice	5%	100,000	2,000,000	AF
Exchequer bills			24,000	1,279,738	AF
total monied companies			*1,069,491*	*21,601,610*	
Publicly held debt					
irredeemables					
life annuities			27,209		own | AF
annuities 1692, 1694	1792–94		140,530		own | AF
annuities 1704–05	1803–04		150,746		own | GF
annuities 1706–08	1805–07		376,430		own | AF
annuities 1710	1742		81,000		own | AF
lottery 1710	1742		46,260		own | AF
total irredeemables			*822,175*	*15,658,589*	
redeemables					
bank annuities (1715)*		5%	54,600	1,079,000	AF
lottery annuities (1717)*		5%	477,508	9,550,163	GF
lottery 1714 blanks	$\leq$ 1746	5%	52,800	1,055,990	own + AF
lottery 1714 prizes	$\leq$ 1746	4%	26,081	652,020	own + AF
lottery 1713	$\leq$ 1745	4%	35,000	563,300	CL
lottery 1719 (1)*		4%	20,000	500,000	AF
lottery 1719 (2)		4%	30,560	500,000	own
tallies 1719 (5%)*		5%	5,516	110,313	GF
tallies 1717 (4%)*		4%	76,537	1,913,432	GF
total redeemables			*724,001*	*14,845,219*	
total publicly held			*1,546,176*	*30,503,807*	
total			*2,615,667*	*52,105,417*	

Table 6: National Debt, 29 Sep 1719. Source: CUL Ch(H) Papers 49,6. The capital of the irredeemables is computed at the market prices on that day. The last column indicates the funding for each debt: AF = aggregate fund, GF = general fund, SSF = South Sea fund, Exch = Exchequer. $1+2$ means that 2 was a back-up for ' in case of deficiencies. $1|2$ means that the surpluses of 1 were assigned to 2. $> t$ means not before t, $\leq t$ means no later than t. The * symbol indicates that the debt was payable at the Bank of England; otherwise debts were payable at the Exchequer.

sinking fund could be diverted to expenditures rather than debt redemption (as happened systematically from 1733 onward. Reference Pulteney's 1735 pamphlet.

As of 1719, however, the sinking fund seemed healthy: in its first year (ending in September 1718) £569,000 had flown into it, albeit partly from surpluses of the Civil List in earlier years. In 1719 about £255,000 flowed into the sinking fund.

The political situation: the Whig split, reluctance of some members to deal with the debt without converting the irredeemables as mentioned by Aislabie.

Do a flow chart of the tax revenues into AF, GF, SSF, and sinking fund. See what the SSC had to gain from capturing tax revenues assigned to the irredeemables and redeemables. Everything that flowed into the AF and GF would flow into the SSC coffers. What is the float on that? £1.5m

at 3% is at best £50,000, not a lot. They also wanted the gold mines (pb worth nothing) and the African trade (get market cap of African Co, dividend from CoE and get an upper bound on the profit. The target was an 8% dividend by 1727. The capital gains on stock owned by Company and sold over time would bridge until 1727 and prop up the dividend. Make sure to decompose the gain from taking in debt into buying a 5% annuity (reduced to 4% for sure in 1727) and the additional liquidity flows. Of course they, and the extension to Africa, Nova Scotia, etc, didn't materialize in 1720, but it was reasonable to believe the government's promise that they would get the HoC to agree later.

Things to do: remember to go through Chandler, Torbuck, Knatchbull for the 1719-20 and especially 1722 debates.

3.2 The origins of the proposal

The origins of the proposal of 1720 are somewhat obscure. The best source is a text published, probably by John Blount, in 1722 (cite). With the obvious caveat that it is a *pro domo* plea, I will follow its detailed narrative of the emergence of the 1720 conversion.

In mid-November 1719 Blount showed a scheme to the earl Stanhope (who was effective head of the government). The idea was to repeat the 1719 conversion but on a much grander scale, converting all debt, redeemable and irredeemable, into an annuity at 5% protected from redemption for a number of years, then reduced to 4% on a set date and redeemable at any time thereafter. The government would gain the assurance of reducing all debts to 4% at a certain date (whether or not rates fell), accepting in exchange to let the debt enjoy a possibly above-market return for a few years, and to let the South Sea Company act as the government's banker in the meantime.

The plan allowed for any of the monied companies to participate in the debt conversion, but was clearly designed with the South Sea Company in mind. All redeemable debts except Exchequer bills, but including the original annuities of the Bank of England and East India Company, would be taken in, as well as the irredeemables on a voluntary basis. The Company would receive the same interest on the debts taken in until midsummer 1727, payable weekly out of the taxes assigned to those debts. After 1727 the annuity to the Company would be reduced to 4% (a £0.5m reduction) and thereafter redeemable in amounts of £1m or more upon one year's notice. The irredeemables would be exchanged with the government on the basis of 20 years purchase and 11 years purchase for the long and short annuities. The costs of servicing the debts exchanged would become management fees paid to the Company. The Company also proposed to contribute £1.5m to the ongoing war with Spain, with the explicit goal of financing an expedition to acquire settlements in Spanish America for future trade. Should the war end before such an expedition, the Company was willing to give the £1.5m between 1725 and 1727, in effect giving up the value of the protection against redemption. The Company also asked for the monopoly on trade with Africa previously held by the Royal African Company.

Stanhope did not want to involve the Bank of England, nor did he approve of the military expedition, but the rest of the plan satisfied him, particularly the cash payment from

the Company, and he asked Blount to work with Aislabie, Chancellor of the Exchequer, on a revision of the scheme.

The version which they produced had a few modifications. The Bank of England's original fund was left out, but the East India Company's fund included. The Bank of England's two annuities of 1708 and 1717 were to be redeemed with a cash payment from the Company of £3.5m (reducible in proportion if not all debts were subscribed).

In late 1719 negotiations began between the chancellor of the Exchequer and the South Sea Company to redeem all remaining irredeemables. These comprised "long" annuities issued from 1695 to 1708 and extending for 71 to 88 years, and "short" annuities issued in 1710 and extending for 23 years. In addition, the Company would also redeem most of the redeemable debt.[46] A bidding war with the Bank of England led the South Sea Company to offer particularly generous terms that were accepted by Parliament.

The Act (6 Geo I c. 4) specified the price at which the government sold new debt for old debt to the Company: the latter was to receive a 5% annuity of 20 (resp. 14) years' purchase for all long (resp. short) annuities converted, which were approximately market values. At the same time the Company was authorized to issue new stock in proportion to the debt redeemed: if y long annuities were redeemed, the Company could issue $20y$ in stock and the capital of its 5% annuity increased by $20y$. If annuitants accepted less than $20y$ in stock for their y annuity, the Company could sell the remaining stock on the market for cash. Thus, the payment to the government was a way to share the premium on stock, as in 1719. The terms offered to the annuitants were up to the Company.

The bidding was over the sum that the Company would pay the government for the privilege of performing the conversion, and whether that sum was feasible depended on the premium on the Company's stock. We saw that, in 1719, the Company effectively paid nearly one year's purchase to the government for the conversion of the irredeemables. Its initial offer on January 21 was £1.5m and two years' purchase, which worked out to a premium of 20%; on that day the South Sea stock, which averaged 117 in October 1719, had risen to 135. The final terms, offered on February 2 and accepted by the Commons, were 4 $\frac{1}{2}$ years' purchase on all redeemables,, one year's purchase for all long annuities not subscribed, and a £4.156m lump-sum payment. This meant that the actual payment was a lump-sum of £4.156m and one year's purchase of all existing long annuities, and a variable payment of 4 $\frac{1}{2}$ years' purchase on short annuities subscribed plus 3 $\frac{1}{2}$ years' purchase on long annuities subscribed.

Since 20 and 14 were market rates, the Company was already losing $3.5/14 = 25\%$ and $4.5/20 = 22.5\%$ on the short and long annuities respectively; the lump-sum payment, if all eligible annuities were converted, represented another 27% loss.[47] The market price had to be above 150 (50% premium) for things to work out for the Company: it had just

[46]The annuities owned by the Bank of England and the East India Company were not included; the latter was protected until 1736, but most of the former was not.

[47]Seen another way: there were £666,566 long annuities and £121,669 short annuities eligible for conversion (Dickson 1967, 104, 132). If all were converted the Company would receive a 5% annuity on £15,034,686 but pay to the government £7,581,389 or 50.4%. The lump-sum payment would be due over the course of 1721 and the variable payments over the course of 1722.

reached 157 on February 2, and reached 310 when the Act received the royal assent on April 7.

The importance of being last

The South Sea's whole annuity saw its protection from redemption extended to June 1727, after which date it could be redeemed partially but only in £1m increments. The existing annuity bore 5%; the additions resulting from the conversion of 4% redeemables were to bear 4%. All other additions (resulting from irredeemables or redeemables bearing 5%) were to bear 5% until June 1727 and 4% thereafter.[48]

The motivation as described by Pulteney (1735, 28): "by these means they [the Bank and the South Sea Company] secured to themselves the immediate advance upon their principal, by securing the payment of the whole national Debt, in course of time, and put themselves, as far as then could be thought of, in the situation of being last paid off."

Pulteney (1735, 29–31) on the bidding contest between the two in January 1720: "everybody foresaw, both from the nature of it, and the bidding between the two companies, that the contest was only *who should be last paid off*; since there was still a security that the whole should be gradually paid; and therefore who would give most to the Publick out of the *immediate profit*, or *advance*, that would accrue to those, who should be put into that desireable situation . . . They [the Bank] foresaw that the money which the others were to give, together with the increas'd sinking fund, would be apply'd, in the first place, to pay off those, who did not subscribe into the South-Sea Company; from whence only could any rise be supposed in their stock, or any temptation to subscribe into it as so high a price as it must be set at, in order to raise what the Company was to pay the publick and get any thing themselves. . . the immediate advantage that was to accrue to the Company, was by putting themselves as far off as they could from being paid" because increases in the sinking fund, which resulted from the debt conversion, could only be applied to debts contracted before December 1716.

Argument about price reaction: "if the whole public debts were put in a way of being all discharged in twenty years, or some such term, that men could see through it, he doubts not but 4% per annum would in five or six months admit of an advance of 5 or 6% and, contrary to former practice, the securities to be last discharge would still admit of the greater advance, or praemium" (Enquiry into the State of the Union, p. 216, cited by Pulteney (1735, 22)).

The events of 1720, in brief

Simply put, the rest of the story is this: between April and September 1720 stock was issued in seven different subscriptions, three to convert debt and four to raise cash (with immediate as well as deferred payments). The terms changed as the market value of stock

[48] Strangely, the proposals from the South Sea Company allowed a reduction to 4% on the whole annuity, but the text of the Act stipulates such a reduction only on the additions (6 Geo I c.4 s.30), reiterates the amount of the original annuity (s.57), and states that the whole annuity is redeemable after June 1727 in whole (s.58) or in £1m parts (s. 59).

rose. After the value fell in September 1720, the Company softened the terms of the later debt and money subscriptions, at two general courts (September 1720 and March 1721). Ultimately Parliament intervened, with two major acts: one confiscating the estates of the Company's directors (7 Geo. 1, c. 28) the other redistributing stock among different categories of stockholders (7 Geo. 1, st. 2). The sequence of subscriptions define the categories of stockholders, and the subscription terms (as modified over time) and redistributions define the gains and losses of the categories.

Of the three debt subscriptions, the first concerned irredeemables only, short and long annuities. It took place on April 28, the terms were announced on May 19 (with one week allowed annuitants to retract), the subscription books were filled by the Company on June 23, the instrument was issued by Treasury on September 28 and the debt holders credited with their new stock on October 5.

The second debt subscription concerned redeemables only, and only those that were managed by the Bank of England. The subscription took place on July 14, the terms were announced on August 12 and modified on September 30, the subscription books filled on October 15, the instrument was issued by Treasury on December 9 and the debtholders credited with stock on December 12.

The third debt subscription concerned the irredeemables that had been so far unsubscribed, as well as other redeemables (the securities from the 1714 and 1719 lotteries, which bore 4%). It took place on August 4, the terms were announced on August 12 and modified on September 30, the subscription books filled on October 17, the instruments issued by Treasury in January 1721 and the debtholders credited at the opening of the books on May 1, 1721.

The four money subscriptions were held on April 14, April 29, June 17, and August 24. Only the first two were ever issued receipts.[49] The first money subscription made three additional payments (on June 14, August 14, and November 14), the second made one additional payment (September 14). The Company offered to lend the amounts due in August and September. No additional payments were made on the third and fourth subscriptions.

The Company's directors officially authorized three loans: against stock on April 21, against stock on May 20, and on July 27 against stock and subscription receipts.[50] We know from the loan books that loans were not made past September. Since no debt subscriber actually received stock before October 5, none could have been recipient of such loans. As for the money subscribers, only the first and second ever received receipts which they could use as collateral. Hence the first and second loan were only made to old proprietors, and the third to old proprietors and to first and second money subscribers.

[49] See 9 Geo. 1, c. 23, s. 5: "And whereas the said South-Sea company did . . . take in two subscriptions for sale . . . which are commonly called their third and fourth subscriptions, but never gave out any receipts for the monies paid in for the same, whereby to evidence the title to the said subscriptions. . ."

[50] As mentioned above the Company advertised in the *London Gazette* that it was lending the payments due on August 14 and September 14. In addition, on August 19 the Treasury Committee resolved "to lend out on the Company's stock at 400% and on the 1st and 2d subscriptions at 300% to all such persons as shall desire the same" (HL/PO/JO/10/5/64, p. 27).

4 The aftermath of the Bubble

Amazingly, debt subscribers had signed powers of attorney to exchange their debts even before the terms of conversion were announced (although the 1st subscribers were given a week to change their minds after the terms were announced). Money subscribers knew the terms, but as the price of South Sea stock fell far below the price at which they had agreed to purchase, they were understandably unhappy. From September 1720 to April 1723, the subscription terms were altered by the Company and later by Parliament, and distributions of stock were made to various categories of stockholders.

The settlement took place in two steps. First, the decisions of the General Courts of 30 September 1720 and March 1721 were implemented. The first improved the terms offered to the second and third debt subscribers (Table 7) and postponed payments on the third and fourth money subscriptions. The second decided to close the money subscriptions and allow subscribers stock for money already paid, with no further payments required.

Second, an Act of Parliament (7 Geo. 1, st. 2) passed in August 1721 did a number of things. First, it settled the obligations of the Company to the government by discharging it of the cash it had promised, but reduced its annuity by £2m. With respect to the allocation between shareholders: (a) it equalized the treatment of the 1st debt subscription on one hand, and the 2nd and 3d debt subscription on the other hand, as far as the irredeemables were concerned; (b) it prescribed an addition for the redeemables and the money subscriptions, and (c) it allocated what was left over to all stockholders on the basis of their new holdings. This last allocation actually took place in two stages: at 33% increase was prescribed for all stockholders in September 1721, and the General Court prescribed an additional increase of $\frac{1}{16}$ in September 1723.

The logic behind the Parliamentary additions of 7 Geo. 1, st. 2 for holders of irredeemables was as follows. The 1st subscription received stock and bonds. The amount received in bonds was valued at par, the amount received in stock was valued at 150%, and the two were added. The 2d and 3d subscriptions received stock, which was valued also at 150%.[51] The difference between the two valuations was calculated, then converted into stock at 150%, and this defined the addition to the second and third subscriptions. Inexplicably, however, everyone was also credited with a $\frac{1}{3}$ increase in stock.[52]

There are a several categories of individuals concerned, depending on whether they held stock before the subscriptions began, or were money or debt subscribers, and in which subscription. There are two ways to consider the end result of the subscriptions and the final settlement. One is to look at an individual in each of the four categories, the other is to look at the aggregates. The first way was followed by Anderson (1787, 3:120), the second way has not been followed until now (note Carswell 1960, 261 however).

[51] The blanks of the 1710 lottery and the 1710 8% annuities in the 2d and 2d subscriptions were also credited with £1.175 in odd money.

[52] Where this increase in stock came from will become apparent below (Table 10).

5 Winners and Losers

5.1 Gains and losses for individual debt subscribers

As I have said above, this section presents relatively little that is new. The only changes relative to Anderson (1787, 3:120) and Dickson (1967, 183–87) is that I use market values and take into account dividend payments.[53]

Table 7 presents the terms for the different debt subscriptions.

Table 8 breaks down the individual gains and losses by types of debt. The calculation is done as of April 1723, when the restructuring was complete (but right before the split between trading stock and annuities). I use the market values of all relevant securities, both South Sea Stock and the redeemables and irredeemables, and compare the portfolio of a debtholder who had not converted to one who had converted. I take into account the dividend payments between 1720 and 1723 and assume that they are invested at 5%. I also distinguish between the 1st and 3d subscriptions for the holders of irredeemables. The reason is that, although Parliament did its best to equalize their treatments, it did so at the market values of August 1721 (150). By April 1723 South Sea stock had fallen below par. Had it stayed at 150 the long annuitants would have all done about 10% better by converting, and the short annuitants would have only lost 14%.

The basic conclusions of Anderson (1787) and Dickson (1967) are unchanged, although the losses are somewhat smaller. The long annuitants who converted lost 17–25%, the short annuitants 24–40%, and converting early would have been better than converting late, but only by 5–6%. The holders of redeemables lost much more, with a slight difference: the holders of 4% doing slightly worse than the holders of 5% annuities.

5.2 The government's position

Dickson (1967, 186) concludes this evaluation by saying that "[t]his was perhaps as near as the English government came in the eighteenth century to repudiating its obligations." How near did it come, and to what extent was government debt reduced?

Table 9 puts together the British national debt.[54] I use market values so as to compare not just interest payments but capital across different types of debt. This is straightforward as long as the instruments are quoted. The problem arises for the debts of the monied companies (of course, using the share price would be incorrect, as it would include the value of the privileged trade attached to each company). For the EIC and BOE, I use the market price of long annuities and assume that their protected annuities are converted to 4% as soon as possible (1732 and 1742 respectively). For the portion of the BoE's annuity that was not protected I use market prices for 5% redeemables. For the South Sea Company, I assume that the protection (until 1723 as of 1719, until 1727 as of 1723) was of negligible value.

[53] Dickson (1967) is reliable inasmuch as he follows Anderson and looks at capital gains and losses. His calculations on future dividend flows, which should yield the same answers, fail to take into account the duration of the annuities.

[54] This is similar to Table 9 in Dickson (1967, 93) for 1719.

terms set on:		1st debt subscription May 19, 1720			2d and 3d debt subscriptions Aug 12, 1720			Sep 30, 1720		adjustment by 7 Geo. 1, st. 2 Aug 10, 1721			
stock valued at:		375%			800%			400%		150%			
	per:	stock	bonds	price	stock	bonds	price	stock	price	value of terms for:		difference	
	£	£	£	yrs	£	£	yrs	£	yrs	1st	2d & 3d	£ cash	£ stock
long annuities													
96-year annuities	98	700	511.0	32	420	168	36	784	32	1561	1293 3/5	267 2/5	178 4/15
99-year annuities	100	700	575.0	32	400	400	36	800	32	1625	1320	305	203 1/3
short annuities													
1710 lottery: blanks	98	350	353.5	17	210	35	17 1/2	417	17	878 1/2	688 2/5	190 1/10	126 11/15
1710 lottery: benefits	100	400	200.0	17	200	150	17 1/2	425	17	800	701 1/4	98 3/4	65 5/6
1710 9% annuities	90	350	217.5	17	200	0	17 7/9	383	17	742 1/2	632 3/10	110 1/5	73 7/15
redeemables	100				12.5	0	25						

Table 7: Terms for various debt subscriptions. For irredeemables the price was expressed as multiple of the annuity (years purchase) and consisted of a portfolio of bonds or cash and stock (valued in £cash per £stock). The adjustments prescribed by 7 Geo. 1, st. 2 represented the difference in value between the two portfolios, but computed with a different value of stock.

	not converted £		converted £				converted /not converted	
			1st sub		2d-3d sub		1st sub	2d-3d
	stock	div	stock	div	stock	div		sub
irredeemables								
annuities								
long of 1695 (per £98)	1,985	309	1,062	796	1,436	277	0.81	0.75
long of 1704-08 (per £100)	2,025	315	1,062	870	1,494	288	0.83	0.76
short of 1710 (per £90)	1,092	309	531	512	807	155	0.74	0.69
1710 lottery								
blanks (per £98)	1,092	309	531	512	807	155	0.74	0.69
benefits (per £100)	1,175	315	607	348	736	142	0.64	0.59
redeemables								
4% (per £100 face value)	101.25	15.76	-	-	50.58	7	-	0.50
5% (per £100 face value)	95.50	12.61	-	-	50.58	7	-	0.53

Table 8: Gains and losses for individual debt subscribers. The first two columns show the market value (April 1723) of debt that was not converted ("stock") and the accumulated dividends collected from 1720 to 1723 ("div"). The next four columns show the same for debt that was converted in the 1st subscription or in the 2d and 3d subscription.

	Oct 1719			Apr 1723		
	capital	interest	market value	capital	interest	market value
East India Company	3,200,000	160,000	2,900,000	3,200,000	160,000	2,960,000
Bank of England (6%)	1,600,000	96,000	1,524,000	1,600,000	96,000	1,572,000
Bank of England (5%) 3,775,028	188,751	3,850,528	3,775,028	188,751	3,793,903	
SS annuity (owned by BoE)				4,000,000	200,000	4,020,000
South Sea Company	11,746,844	596,740	11,981,781	33,802,201	1,661,114	33,971,212
change				*+26,055,357*	*+1,264,374*	*+26,060,806*
redeemables 5%	11,149,975	557,499	11,926,463	1,628,714	81,436	1,636,858
redeemables 4%	4,766,822	190,673	4,582,770	932,078	37,329	831,616
irredeemables		788,235	15,009,173		155,537	2,943,955
change					*-1,262,105*	*-26,105,976*
life annuities		40,802	517,584		32,819	478,156
debt redeemed				-64,805	-2,638	
debt issued				1,501,528	63,650	

Table 9: British government debt in October 1719 and April 1723.

The remainder of the rows comprise debt held outside the monied companies.[55] The changes in both categories (debt to monied companies and debt to public) are entirely due to the South Sea conversion, as I separate out repayments and new issues of debt in the last two rows.[56]

The striking result is that the reduction in interest was very small: £32,000 out of a total of nearly £1.3m, and the change in capital value was negligible. The government apparently neither gained nor lost from the whole operation.

[55] To evaluate the life annuities I use the market rate on long annuities and price the actual flow of payments to the life annuitants (i.e., I assume perfect foresight of mortality rates). Given the small amounts the details don't matter.

[56] A few repayments were made between 1720 and 1722 on lottery loans of 1713, 1714, and 1719. The new issues are the Army Debentures funded in 4% Annuities, the 4% wrought plate Annuities of 1720, the St Kitts-Nevis debentures funded at 3%, and the 5% annuities of 1721. I neglect the lottery loans of 1721–24 since they were each repaid within a year and functioned more like floating debt.

This is not surprising. What the government gained was the assurance of an interest reduction on that part of the additions to the South Sea annuity bearing 5%, to 4% in 1727. But this was really a gain only on the part of the annuity that corresponded to the converted irredeemables, or £12,069,948: reducing the annual payment on the irredeemables was legally impossible before the South Sea conversion. The redeemables were redeemable, and sooner or later would have been reduced to 4%. Furthermore, all the government succeeded in doing with the irredeemables was to change to profile of payments over the future, not necessarily lower it. It is true that the interest payment was to fall in 1727, but the debt remained perpetual, whereas the annuities were going to "cease and determine" eventually.

The ex-post gain can be computed by taking the net present value of the irredeemables that were converted, at 5% (roughly the market rate for long annuities in 1719) and compare with the net present value of the payments actually made by government on the irredeemables' share of the South Sea annuity, which were reduced in 1727, 1751 (to 3.5%) and 1758 (to 3%). The difference in net present values is £1.8m. This compares with a total debt of £52.4m in 1719: not a trivial difference, but not a sizeable one either.

Why doesn't that difference show up in market values? I suspect that markets underestimated the eventual interest rate reductions. By buying the option to redeem the irredeemables, the government made a bet with the markets that rates would fall, and won the bet.

The government did come close to default. The Act to restore Public Credit of August 1721 (7 Geo. 1, st. 2) reduced the Exchequer's annuity to the South Sea Company by £2m, but this was rescinded two years later (9 Geo. 1, c. 6).

If the government didn't win much from the South Sea conversion, then the whole operation was mostly a redistribution within the Company, not a transfer to or from government. To find out who won and who lost, we must figure out the exact allocation of stock.

5.3 The allocation of stock

In this section I try to determine the allocation of stock. The surviving documents are limited, so my results are tentative.[57]

The start and end point of the calculation are the statements in 6 Geo. 1, c. 4, s. 30 that, as of "the present capital or joint stock of the said [South-Sea Company] doth amount in the whole to £11,746,844 8s 10d (being their present capital stock)" and in 9 Geo. 1, c. 6, s. 3 that "the whole capital stock of the said South-Sea company doth by computation amount to £33,802,483 14s $\frac{1}{2}$d." The first Act is the one that set in motion the debt conversion in 1720, the second is the one that concluded it. The difference between the two amounts is

[57]The documents that would have been particularly useful are a set of accounts that was presented to the General Court on 16 June 1732 and examined by a committee of stockholders. The committee's report HL/PO/JO/10/2/157, No. 25) also printed as *Report of the Committee* 1733, unfortunately does not reproduce the accounts, but summarizes them and provides some figures, which I use here.

the net corporate stock creation. The question in this section is: who received what, and at what price?

It will be convenient to distinguish three classes of owners. The first are the old proprietors, that is, owners of South Sea stock before the general conversion began in 1720. The second general class is that of holders of government debt who exchanged it for stock. We will need to further break down this class by type of debt (redeemable or irredeemable) and date of subscription (1st, second, and third) because the terms offered to each differed. The third consists of the money subscribers, further broken down by subscription (the third and fourth were treated identically and will be considered as one class). In addition to these three broad classes, we will need to keep track of stock owned by the corporation itself. Of course, such stock ultimately belongs to the three classes jointly. However for this account we also have a start point (0 in 1720) and an end point (£46,306 on 26 May 1732).[58] This explains the columns in Table 10. The rows are chronological.

In principle the allocation of stock to the various classes is straightforward. In the course of the conversion stock was offered to debtors in exchange for their debt: knowing the exact terms offered and the quantities tendered, we can compute the resulting allocation. If the conversion had taken place pound for pound we'd be done. But, as the small-scale conversion of 1719 showed, it didn't need to. The total amount of debt taken in corresponds to the new annuities owed by the Exchequer to the Company, and to the total corporate stock created, but not all that stock went to the debtholders since they accepted stock at more than par. Part of the remainder was sold for cash to the money subscribers, but not all: what remained was allocated by Acts of Parliament (7 Geo. 1, st. 2, s. 3-4, and 9 Geo. 1, c. 6). The problem is determining how much went to the money subscribers.

We can start from the total paid in by money subscribers given by Hutcheson (1721) and the terms given them by the General Courts of 20 Sep 1720 and 30 Mar 1721 ($\frac{1}{3}$ of cash paid for the 1st, $\frac{1}{4}$ for the 2d to 4th subscriptions). Using the terms of 30 Sep 1720 for debt subscribers (HL/PO/JO/10/5/195/4, p. 157-158) we can verify the total amounts given to debt subscribers (HL/PO/JO/10/2/157, No 4). The sum of distributions to money subscribers and debt subscribers is almost identical to the figure "carried to the credit of the to proprietors of old stock, redeemables and unredeemables, and money subscriptions with midsummer dividend of 10%" of £24,500,422 (HL/PO/JO/10/2/157, No. 25, *Report of the Committee* 1733, account No. 4).[59] These distributions, along with the midsummer 1720 dividend paid in stock, give us the situation as of March 1721. Note the large amount of unassigned stock, still owned by the Company. The next step was to allocate this resource, by the so-called Parliamentary additions.

The Act (7 Geo. 1, st. 2) did two things: it equalized the treatment of holders of irredeemables across subscriptions, and distributed whatever was left of the unassigned stock. The first subscription received cash and stock valued at 375, while the others were all-stock with a slightly higher value of stock (400). Using the then-market value of 150 for South Sea stock, Parliament computed the cash value received by each category of sub-

[58] HL/PO/JO/10/2/157, No. 25, *Report of the Committee* 1733, account No. 8.

[59] I assign the slight discrepancy of £3588 to the 3d and 4th money subscribers.

	carried to the credit of:									
	old	irredeemables		redeemables		money			Company	total
	proprietors	1st subs	3d subs	2d subs	3d subs	1st subs	2d subs	3d & 4th subs		stock
existing stock (Xmas 1719)	*11,746,844*	-	-	-	-	-	-	-	-	*11,746,844*
stock created by subscriptions	-	-	-	-	-	-	-	-	26,055,359	
distributions to subscribers	-	3,248,456	1,000,803	2,807,694	684,792	906,140	175,120	1,703,262	-10,526,266	
10% midsummer 1720 dividend	1,174,684	324,846	100,080	280,769	68,479	90,614	17,512	170,326	-2,227,311	
existing stock (Mar 1721)	*12,921,529*	*3,573,301*	*1,100,883*	*3,088,463*	*753,271*	*996,754*	*192,632*	*1,873,588*	*13,301,781*	*37,802,203*
Parliamentary additions:										
7 Geo. 1, st. 2 (sects 3-4)	-	-	246,791	1,029,488	251,090	-	58,373	567,754	-2,153,497	
Sep 1721 distribution	4,307,176	1,191,100	449,225	1,372,650	334,787	332,251	83,668	813,781	-8,884,640	
Mar 1723 distribution	1,076,794	297,775	112,306	343,163	83,697	83,063	20,917	203,445	-2,221,160	
total distributions	5,383,970	1,488,876	808,322	2,745,301	669,574	415,314	162,959	1,584,980	-13,259,296	
sale to Bank of England (1722)	-	-	-	-	-	-	-	-	-4,000,000	
misc transactions (1721-22)	-	-	-	-	-	-	-	-1,130	1,130	
existing stock (Apr 1723, gross)	*18,305,499*	*5,062,177*	*1,909,206*	*5,833,764*	*1,422,846*	*1,412,068*	*355,591*	*3,457,438*	*-3,956,385*	*33,802,203*
pledges	-1,889,412	-	-	-	-	-461,643	-89,217	-	2,440,272	
additions on pledges	-751,231	-	-	-	-	-183,549	-35,473	-	970,253	
directors estates	-1,221,661	-	-	-	-	-	-	-	1,221,661	
existing stock (Apr 1723, net)	*14,443,195*	*5,062,177*	*1,909,206*	*5,833,764*	*1,422,846*	*766,876*	*230,902*	*3,457,438*	*675,800*	*33,802,203*
misc sales (1723-26)			124,479				-124,479			
annihilation 1728			-				-500,000			
annihilations 1730-31			-994,984				-5,016			
existing stock (May 1732)	*14,063,653*	*4,929,151*	*1,859,035*	*5,680,463*	*1,385,456*	*746,724*	*224,834*	*3,366,582*	*46,306*	*32,302,203*

Table 10: Account of the distribution of South Sea stock among various categories of stockholders.

scriber and brought the second and third subscribers to the level of the first subscribers. The remaining unassigned stock was enough for a 33 $\frac{1}{3}$% increase in nominal stock for all stockholders in September 1721 and another 6.25% increase in March 1723. Note that the total of parliamentary additions can be read as the decline in the Company's holding, namely £13,259,296. This exceeds the figure of "Parliamentary additions to the proprietors" of £12,289,043 given by HL/PO/JO/10/2/157, No. 25, Account No. 4: I will correct for this later.

The next item is simply the sale of £4m of the Exchequer's annuity to the Bank of England. An equivalent amount of stock was annihilated out of the company's corporate holding.[60] This brings us to what I call the "gross" positions as of April 1723. If we use these positions to compute the gains and losses of the various classes of stockholders relative to their positions in 1719, we find figures that are similar to Anderson and Dickson.[61] (Note that the initial position of money subscribers is the cash payment they made, and the position of debtholders is the market value of their debt holdings.) But the company's holding is a large negative, which it couldn't be.

The missing pieces are in the next line, and comprise two sources of stock owned by the Company. The first are "pledges," namely the stock pledged by those who borrowed on stock and ultimately forfeited. The second is stock from the directors' estates, which was partly bought at auction by the Company in 1722–23 because it feared the impact on prices,[62] partly transferred by the trustees of the estates in 1728. I explain the discrepancy mentioned above by assuming that the pledges did not receive any parliamentary addition, and hence the latter's total is overstated by my calculation.[63] To assign the pledges and the directors' stock across classes, I assume that the directors were all old proprietors, and that the pledges were held either by old proprietors or by money subscribers, in proportion to the securities, stock and subscription scrip.[64] As noted above, the loans were all made between April and August 1720, at which time the only holders of stock were the old proprietors.

Taking into account these categories leads to the "net" positions as of April 1723, and show that the Company still held quite a bit of stock at that point. The next few lines explain its disposal, mostly by an annihilation in 1728.[65] The annihilations of 1730–31 correspond to a redemption of £1m by Parliament which reduced the annuity paid to the Company and the stock proportionately.

Since I have taken into account the pledges, I have to take into account the loans when

[60]The proceeds were retained by the corporation (as opposed to redistributed to stockholders, as happened in 1730 and 1731).

[61]Carswell (1960, 261) has estimates of the final positions for the original proprietors, the money subscribers, the annuitants (May), the annuitants (August), and the redeemables. My gross values are within 10% of his estimates.

[62]Decision of the General Court, 22 Nov 1722 (BL Add MS 25,544, f. 32r-v).

[63]The overstatement is £970,253, while the parliamentary additions on the £-2,441,719 (assuming the pledges were all part of old proprietors' stock) would be £1,017,383, which is close.

[64]HL/PO/JO/10/2/157 No. 15 lists £2,663,687 in stock pledged and £776,600 in subscription scrip. Hence I assume that default was at the same rate on both securities.

[65]The government began to exercise its right to redeem its debt to the South Sea Company in £0.5m payments. The first payment in 1728 was not rebated to stockholders but applied to the stock owned by the Company. Additional redemptions of £1m each were made in 1730 and 1732, and rebated to owners.

	old	irredeemables		redeemables		money		
	proprietors	1st subs	3d subs	2d subs	3d subs	1st subs	2d subs	3d & 4th subs
market value (Jan 1719)	13,949,378	9,860,601	2,729,524	11,488,864	2,700,433	2,718,420	525,360	6,813,047
market value, gross (Apr 1723)	17,824,980	4,929,295	1,859,089	5,680,628	1,385,496	1,375,001	346,257	3,366,680
cash to 1st debt subscription		2,598,049						
net profit/loss	3,875,602	-2,333,258	-870,435	-5,808,236	-1,314,937	-1,343,419	-179,103	-3,446,367
(in %)	28	-24	-32	-51	-49	-49	-34	-51
loans forfeited*	8,751,364					1,751,297	338,454	
cash from directors estates**	-703,556							
market value, net (Apr 1723)	14,064,061	4,929,295	1,859,089	5,680,628	1,385,496	746,746	224,840	3,366,680
net profit/loss	8,162,492	-2,333,258	-870,435	-5,808,236	-1,314,937	-220,377	37,935	-3,446,367
(in %)	59	-24	-32	-51	-49	-8	7	-51

Table 11: Gains and losses among categories of shareholders. *: Net of recovery . **: net of value of stock bought.

calculating gains and losses of the different classes. We know how much was lent out, and we have the final recovery amount. The difference can be assumed to have been kept by the borrowers.[66] I allocate this amount to the relevant classes (old proprietors and first two money subscriptions) in proportion to their loan amounts.

Once these cash flows and the pledges and directors' stock are taken into account, the gains and losses are rather different. On net the old proprietors made huge gains and the 1st and 2d money subscribers came out even.

5.4 Where did the cash go?

As a check on my calculations, I examine the cash flows of the South Sea Company from January 1720 on. In the absence of the account books, this is conjectural, again relying on later documents. The known figures are summarized in Table 12.

The main source of cash was the money subscriptions, as well as the Exchequer bills borrowed from government for one year. Under "bond issues to unknown" I have put the amount necessary to match up the known stock of outstanding bonds in early 1721. I assume that the payments to the 1st debt subscribers took the form of bonds.[67] Next come the loans to stock holders and the 1st and 2d money subscribers. Simply put, the money raised from the money subscriptions was lent out (instead of being used to pay off the debt subscribers, the ostensible purpose of the money subscriptions) against flimsy collateral. By early 1721, the Company had lent more than it had, leaving it in debt of £3.7m.

How this debt was paid off is shown in the subsequent lines of Table 12. Part of the annuity from the government was sold to the Bank of England for £4.2m in cash, some cash was recovered from the directors' estates, the 1728 redemption was also kept in cash. This was not enough to pay off the bonds, for at the same time the Company was loosing money on its Asiento trade and Greenland fisheries (see Appendix). By 1732, it was still £2m in debt, and it took another ten years (and reduced dividends) to pay off the bond debt.

The South Sea scheme was definitely a Ponzi scheme: the money raised from the early money subscribers was (effectively) spent on old proprietors and the 1st debt subscribers, while the money raised from the late money subscribers was spent on the early money subscribers, in the form of loans that were never recovered.

5.5 Counterfactuals

The government chose to spend £2.1m to bring the annuitants of August to par with those of May and the rest (£11.1m) was distributed evenly across all classes. What else could it

[66] This could have happened in two ways. Parliament had allowed borrowers to make a payment of 10% of their loan and forfeit their pledged stock or receipts, in order to extinguish all claims against them. Some apparently did, but the Company found itself unable to enforce its claims against those who didn't and in 1732 abandoned all efforts, keeping the pledged stock or receipts.

[67] On May 19 the Committee of Treasury resolved to pay the 1st debt subscribers in bonds dated 26 Mar 1720 (HoL 10/5/195/4, May 19). A total of £2.635m of such bonds were sealed (BL Add MS 25,580) which corresponds approximately to the total cash payment to the 1st debt subscription.

	received	spent	balance
cash from money subscribers	10,056,827		10,056,827
Exchequer bills borrowed (Jun 1720)	1,000,000		11,056,827
bonds issued to unknown		688,379	10,368,448
bonds issued to 1st debt subscription		2,598,049	7,770,399
loans to stock		9,330,687	-1,560,288
loans to 1st-2d money subscription		2,228,089	-3,788,377
bonds (1721)			*-3,788,377*
from Bank of England (1722)	4,200,000		411,623
net recovered on loans	717,660		1,129,283
cash from directors estates (net of stock bought)	703,556		1,832,839
government redemption (1 Geo 2 c. 28)	500,000		2,332,839
misc stock sales	124,479		2,457,318
debt for Exchequer bills		1,117,796	1,339,522
excess of dividend over annuity (1721-32)		1,375,417	-35,895
interest on bonds		1,379,246	-1,415,141
loss on Asiento and Greenland fisheries		363,590	-1,778,731
misc spending		189,119	-1,967,850
bonds (1732)			*-1,967,850*

Table 12: Cash flows of the South Sea Company, 1720–32. *Explain why value of stock bought must be deducted from directors' cash.*

have done?

Let's first take as given that the money lent out was irretrievably lost. How could that loss be allocated? There was only one way to make all classes bear the loss proportionately, namely give each class an addition (positive or negative) that equalizes its final share of the total stock to its initial share of the total market values as of 1719.[68]

The results are shown in Table 13. I start from the distribution of stock as of March 1721, before the parliamentary additions. The Company has over £13m of stock that can be allocated among the classes of shareholders. If I allow negative additions I find that equal treatment of all categories would have required negative additions to old proprietors and to the 1st debt subscribers (scenario 1 in Table 13).[69]

If we take as constraint that such negative additions were infeasible, then the worst that could be done to the old proprietors and 1st debt subscribers was to give them nothing. This is scenario 2: the additions are calculated so as to leave all other categories with the same loss. They are slightly worse off under this scenario, but still not badly. If I took into account the cash and stock from the directors' estates, the losses would be further mitigated.

Of course, the only way to make everyone whole was to claw back the £9m lent out. In this respect, the provisions of the Act to restore Public Credit (7 Geo. 1, st. 2) were lenient. On average, £100 had been lent against £30 stock: as of 1721, a debtor could pay £10, forfeit the stock (worth around £45 in 1721, and even less later), and keep the difference of £45.

[68] Let x_i be the initial shares, y_i the interim shares, and A the amount of company stock left to distribute: then the additions that equalize losses are $x_j/(\sum_i x_i)(A + \sum_i y_i) - y_j$.

[69] Note that the returns to the 1st debt subscribers takes into account the cash payment they received.

	old	irredeemables		redeemables		money		
	proprietors	1st subs	3d subs	2d subs	3d subs	1st subs	2d subs	3d & 4th subs
market value (Jan 1719)	13,949,378	9,860,601	2,729,524	11,488,864	2,700,433	2,718,420	525,360	6,813,047
market value, gross (Apr 1723)	17,824,980	4,929,295	1,859,089	5,680,628	1,385,496	1,375,001	346,257	3,366,680
cash to 1st debt subscription		2,598,049						
net profit/loss	3,875,602	-2,333,258	-870,435	-5,808,236	-1,314,937	-1,343,419	-179,103	-3,446,367
(in %)	28	-24	-32	-51	-49	-49	-34	-51
loans forfeited*	8,751,364					1,751,297	338,454	
cash from directors estates**	-703,556							
market value, net (Apr 1723)	14,064,061	4,929,295	1,859,089	5,680,628	1,385,496	746,746	224,840	3,366,680
net profit/loss	8,162,492	-2,333,258	-870,435	-5,808,236	-1,314,937	-220,377	37,935	-3,446,367
(in %)	59	-24	-32	-51	-49	-8	7	-51
market value (Jan 1719)	13,949,378	7,262,552	2,729,524	11,488,864	2,700,433	2,718,420	525,360	6,813,047
existing stock (Mar 1721)	12,921,529	3,573,301	1,100,883	3,088,463	753,271	996,754	192,632	1,873,588
additions (scenario 1)	-1,226,432	-82,458	1,187,538	6,543,749	1,510,760	1,282,357	247,828	3,838,441
market value, gross (Apr 1723)	11,388,100	3,399,208	2,228,350	9,379,367	2,204,600	2,219,285	428,897	5,562,088
net profit/loss	-2,561,277	-1,265,295	-501,174	-2,109,497	-495,833	-499,135	-96,463	-1,250,959
(in %)	-18	-17	-18	-18	-18	-18	-18	-18
additions (scenario 2)	0	0	1,055,098	5,986,296	1,379,731	1,150,456	222,336	3,507,864
market value, gross (Apr 1723)	12,582,339	3,479,502	2,099,387	8,836,547	2,077,011	2,090,846	404,075	5,240,188
net profit/loss	-1,367,039	-1,185,001	-630,137	-2,652,317	-623,421	-627,574	-121,285	-1,572,859
(in %)	-10	-16	-23	-23	-23	-23	-23	-23

Table 13: Effect of alternative distributions of stock (the impact of seized pledges and directors' estates is not taken into account).

6 Understanding the choices

6.1 The process

As Dickson (1967, 168) emphasizes, Parliament had been in recess from June to December 1720 while the bubble collapsed. When it sat again on December 8 it was pressed to intervene. The first step was to lock the subscribers into their deals and deny them a way out: a resolution of December 20 stated that all subscriptions (debt and money) and contracts with the South Sea Company remained "in the present state unless altered for the ease and relief of the proprietors by a General Court of the South Sea Company or set aside by due course of law." But thereafter, most of Parliament's activity was exerted on inquiries into the Company's management, and on legislated punishments for the former directors and senior employees.

Walpole, who had been to work on a plan since October 1720 (Dickson 1967, 170), unveiled his ideas on December 21 1720 (Cobbett 1806–20, 691). He proposed to transform South Sea stockholders into Bank of England and East India Company stockholders through a swap, backed by transferring part of the South Sea's Exchequer annuity to the other monied companies. A statute was passed accordingly in March 1721 (7 Geo. 1, c. 5) but it only authorized the transaction rather than compel it, and the other monied companies were understandably not interested in diluting their franchise in return for more of what they already had (the Exchequer annuity). South Sea stock sank again on the market.

The opposition did not let this failure pass. On April 25, 1721 the staunch Jacobite William Shippen "took Notice, 'That the House had sate a long while, and nothing had yet been done towards the restoring of Publick Credit: That, indeed, a Member of great Parts and Abilities had, at first, proposed a Scheme for that Purpose; but that, instead of proving an effectual Remedy, it appear'd at last to be a mere Palliative, which had rather inflam'd than alleviated the Distemper." Walpole, the obvious target of the attack, responded "That it could not be deny'd, that while that Scheme was pursu'd, it had done some Good, and kept up the Price of Stocks; and that they fell since it had been laid aside: That, however, he never intended to raise Stocks above the intrinsick Value, for that would bring us again into the same unhappy Circumstances which the raising of them had before occasion'd." Walpole then moved that the House appoint a day to consider the state of the public credit, which was unanimously agreed to (Cobbett 1806–20, 7:791–92).

The appointed day was May 2 and the first resolution was to remit the sums owed by the Company to the government. William Sloper opened the debate, blaming the directors of the South Sea argued that the subscribers were victims of the Company's management and deserved "some relief," and was seconded by Joseph Jekyll, and supported by Archebald Hutcheson and Nicholas Lechmerewho all concluded that "some relief" ought to be given to the subscribers. Milner then moved that *all* the sums owed by the Company be remitted, which was strenuously opposed by Smith, who argued that public credit "would not be restored by taking away from the public so great a sum to give it to private persons." The victims of the scheme deserved compassion but should only be

compensated from the estates of the directors, not public money. Shippen, Thomas Pengelly, and a few more joined him, while full remission was defended by Horatio Walpole, lord Tyconnel, Pulteney, Robert Walpole, col. Bladen and some others. Milner's motion, carried 221 to 194 in committee (Cobbett 1806–20, 7:795). Debate in the House resumed the next day debate lasted four hours and a half, when the "Court party" had to cede some ground to the opposition. As amended the final text only said that "relief would be given" to the Company (without specifying how much) and left it to the House to decide further how further relief would be given to the stockholders (HCJ 19:535), although this was interpreted by some (HMC Onslow 621, HMC Portland VII 297) as full relief.

The House continued to debate the state of public credit, as committee of the whole over the course of six weeks. Most noteworthy was general Wade's scheme, proposed on May 5, providing that whatever the Company had collected from subscriptions be divided equally among subscribers; that old proprietors receive nothing nor pay nothing of what was due to government; and that forfeitures all go to pay the Company's debt. Although it seemed "generally relished" the committee came to no resolution on it, nor did it on Lechmere's motion that Parliament take into its hands both relief for the sufferers and the determination of all bargains and contracts. On May 9 it was decided to give 33% to the redeemables and 2d through 4th money subscribers. On May 12 the Company's payment to government was raised again: Yonge proposed that £2m be retained and the rest remitted, and was supported by Pulteney and Jekyll, but Robert Walpole "warmly insisted" on remitting the whole payment, along with Lord Barrington, Grey Nevill, and Tufnel. Smith again proposed that nothing be remitted, but this went down 206 to 138, and £5m was agreed upon. On May 22, 24, and 26 the question of the loans was debated at length, and a proposal made by a Scotch member that the loans be forgiven and the pledges secured to the Company was soundly rejected 211 to 46 (May 24).

Finally two series of resolutions were passed by the whole House on June 9 and June 13 (HCJ 19:585, 589). The committee's resolution to add 33% to the redeemables and the 2d–4th money subscribers was accepted by the House. The proposal to remit all but £2m was again opposed by those (Hungerford and "most of the courtiers") who wanted to remit everything and those (Sloper and a few others) who wanted to remit nothing, and won narrowly (166 to 155). Equalizing the irredeemables of the 1st and 3d subscription with stock valued at 150% was easily approved, and redistributing whatever was left over equally as well. The treatment of loans was still contentious and the proposed resolution was recommitted. After another day of debate two resolutions were approved by the whole House on June 13.

7 Provisional conclusion

The South Sea bubble was "as near as the English government came in the eighteenth century" (or at any time since) "to repudiating its obligations" (Dickson 1967). But in fact the government gained very little from the episode. It repudiated its obligations to some creditors and enriched others. The old proprietors were the big winners. If one

takes into account the loans made by the South Sea Company, which Parliament turned into gifts, the old proprietors did even better and the early money subscribers came out even. To be sure, the old proprietors and early money subscribers who did so well were not stockholders any more in 1723, since their pledges (stock and subscription receipts) were forfeited. The "average" old proprietor or early money subscriber did not do as well, but still vastly better than the other classes.

I showed that it this unequal treatment was could have been avoided. Even without trying to claw back the money wasted in loans, it was possible to treat all categories more equally and limit losses to 22% with a better distribution of the stock available in the Company's account. Going further, there is no reason the Company (or Parliament) could not have done better with selective capital calls or other measures. At the same time in France, the government dealt with half a million claimants and made extraordinary efforts at fairness (Chrétien-Deschamps 2015). The number of individuals involved in Britain was two orders of magnitude less.

Why not? The answer is not clear. Under Walpole's firm guidance the House of Commons made its decisions quickly, in June 1721 Cobbett 1806–20, 7:895–99. Days before the bill was passed, a throng of annuitants invaded Parliament to protest, but they were (literally) read the Riot Act and dispersed, muttering bitterly: "you first pick our pockets, and then send us to gaol for complaining." The next step in the project is to examine the available records on loans and subscriptions and investigate losers and winners at an individual level.

Appendix

Chronology

7 Apr 1720: Act receives royal assent

11 Apr 1720: 1st money subscription resolved

13 Apr 1720: price and quantity of 1st money subscription resolved

14 Apr 1720: 1st money subscription taken

14 Apr 1720: midsummer dividend of 10% in stock resolved

21 Apr 1720: Committee of the Treasury empowered to lend £500,000 on stock

28 Apr 1720: 1st debt subscription taken; 2nd money subscription resolved

29 Apr 1720: price of 2nd money subscription resolved

29 Apr 1720: 2nd money subscription taken

19 May 1720: terms of the 1st debt subscription announced

20 May 1720: Committee of Treasury empowered to lend £1m exchequer bills

14 Jun 1720: 2nd payment of 1st money subscription due

15 June 1720: resolution for 3d money subscription, with price and quantity

17 Jun 1720: 3d money subscription taken

23 Jun 1720: books for 1st debt subscription opened

23 Jun - 26 Aug: transfer books shut

8 Jul 1720: 2nd debt subscription resolved

14 Jul 1720: 2nd debt subscription taken

27 Jul 1720: 3d debt subscription resolved

27 Jul 1720: Committee of the Treasury empowered to lend "the company's money"

4 Aug 1720: 3d debt subscription taken

12 Aug 1720: terms on 2nd and 3d debt subscription announced

12 Aug 1720: loans for next two payments on money subscriptions (14 Aug and 14 Sep) announced

14 Aug 1720: 3d payment of 1st money subscription due

19 Aug 1720: Committee of Treasury decides to lend £400,000 in Company bonds on stock and receipts

23 Aug 1720: 4th money subscription resolved, with price and quantity

24 Aug 1720: 4th money subscription taken

1–11 Sep 1720: books shut

14 Sep 1720: 2nd payment on 2nd money subscription due

30 Sep 1720: new terms on 2nd and 3d debt subscriptions and 3d and 4th money subscriptions

5 Oct 1720: stock made out to subscribers of 1st debt subscription

13 Oct 1720: 4th payment on 1st money subscription postponed from 14 Oct to 14 Nov

15 and 17 Oct 1720: books for 2nd and 3d debt subscription open

14 Nov 1720: 4th payment on 1st money subscription due

10 Dec 1720: 5th payment on 1st money subscription postponed to March 14

12 Dec 1720: stocks made out to the 2nd debt subscription

24 Dec 1720-30 Apr 1721: books shut

18 Mar 1721: General Court changes terms for money subscriptions

10 Aug 1721: 7 Geo. 1, st. 2 receives royal assent, prescribes various additions

1 Sep 1721: Company distributes $\frac{1}{3}$ increase to all stockholders

26 Jun 1722: Bank treaty agreed

12-25 Apr 1723: Company distributes $\frac{1}{16}$ increase to all stockholders

21 Jun-21 Aug 1723: split into stock and annuities

The later history of the South Sea Company

Remission of the Two Millions

As mentioned earlier, Parliament initially remitted only a portion of the payment that the South Sea Company had promised for the right to convert the national debt. There remained £2m, which was to be deducted from the Company's Exchequer annuity from midsummer 1722. Later, however, the £2m was reinstated (9 Geo I c. 6).

The Company had bitterly complained about

Later history

On January 20, 1722 another General Court was held.

In 1723 (9 Geo. 1, c. 6), at the request of the proprietors, the stock of the South Sea Company was split in two halves. One half became a pure annuity,g bearing 5% until June 1727 and 4% thereafter, redeemable by Parliament at any time after June 1727 in sums of £500,000 or more. The other half remained as the "trading stock," in modern terms the equity, entitled to the other half of the Exchequer annuity (the annuity owed by the Treasury to the Company), the management charges allowed by law, and all profits arising from the charter, but also burdened with all the debts of the Company.

Redemption as allowed above began at midsummer 1728, when £500,000 were paid to the Company. The corresponding reduction in outstanding stock and annuities was applied to what the Company owned in its corporate capacity (1 Geo 2 st. 2 c. 8, s. 19–20), namely the directors' estates, and the cash used to pay off Company debt. [70] A further £1m in stock was redeemed in June 1730 (3 Geo 2 c. 16): the outstanding stock was proportionately reduced by 6% and the amount disbursed to stock owners.[71] Then £1m in annuities were redeemed in September 1731 (4 Geo 2 c. 5), and £1m in stock in June 1732 (5 Geo 2 c. 17): outstanding stock was reduced by 6.25% and the cash used to repay outstanding bonds.[72]

In June 1733, at the Company's request the trading stock was further reduced (6 Geo 2 c. 28): three quarters were converted into "new South Sea annuities" bearing 4% until redemption, as before.

For all practical purposes, the annuities, both old (created in 1723) and new (created in 1733) were government debt: the only difference with the other funds managed by

[70] See HoL PO/JO/10/2/157, No. 25, discussion of Account No. 8: "Stocks and annuities annihilated at Midsummer 1728, being part of the Directors forfeited Estates, and the Money brought to the Cash-Accompt, £500,000".

[71] BL Add ms 25,544, 76r.

[72] BL Add ms 25,544, 111v. The Directors' recommendation to do was initially rejected by stock owners, but they eventually relented.

the Bank of England is that they were managed (that is, interest paid and transfers registered) by the South Sea Company. There were further redemptions of annuities: £1m of old annuities in September 1733 (6 Geo 2 c. 23), £1m of new annuities in December 1736 (9 Geo 2 c. 34), and £1m of old annuities in September 1737 (10 Geo 2 c. 17). The South Sea annuities received a quarter's dividend of 1.25% at Michaelmas 1723, then 2.5% from Ladyday 1724 to Ladyday 1727, 2.25% at Michaelmas 1727, then 2%. The new South Sea annuities received 2% semi-annual dividend from Midsummer 1734. Both old and new South Sea annuities were reduced to 3% in 1750 during Pelham's conversion of the national debt; dissentients were paid off with the proceeds of new 3% annuities issued in that year.

The stock, meanwhile, continued to bear a variable dividend (Table 14). During Pelham's conversion the proprietors obtained from the government that the interest paid on the capital stock be reduced to 3% only from December 1757, and that the charges for management remain unchanged (24 Geo 2 c. 11). By 1757 the Company had invested enough in government securities to maintain the annual dividend at 3.5% in spite of the reduction. The dividend rate remained unchanged until the liquidation of the Company in 1854.[73]

Further commercial history (Anderson 1787, vol. 3). The Company's main activities were twofold; one was the exploitation of the Asiento, which involved the slave trade and the annual ship. The other was whale-fishing, which the Company carried out from 1725 to 1732. The latter activity proved a loss, the whalers never managing to bring much more than one whale per ship sent, whereas a minimum of three was needed to break even. Whaling ended up costing the Company £178,000.

All claims related to the Asiento right of 1713 were settled by the Treaty of Madrid (5 Oct 1750): Britain renounced all claims against a payment of £100,000. The South Sea Company's monopoly on trade with South America and the Pacific coast remained, but Spain wasn't obligated to allow such trade to take place. This effectively ended the South Sea Company's last hopes of commercial activities. The monopoly was a source of revenue only to the extent that it could license other companies to trade in the geographical area of its privilege, which it did on occasion, granting licenses for whalers in the 1780s and for fur-trading in what is now British Columbia in the 1790s. But the Company was gradually deprived of its privileges: in 1802 British-built ships were dispensed from obtaining a license to fish in the Pacific Ocean (42 Geo 3 c. 77); in 1807 the Company's privilege on trade was revoked as far as British territories were concerned (47 Geo 3 sess. 1 c. 23); and in 1815 all remaining privileges were revoked (55 Geo 3 c. 57). At the same time, the government compensated the Company by promising to accumulate a fund of £610,464 (about 20% of the remaining stock) financed by taxes on trade in the Company's former area of privilege, and until then guaranteed the annual dividend of 3.5%. The fund was turned over to the Company in 1845. Finally, in 1853 Parliament redeemed all remaining stock and annuities (16 & 17 Vict c. 23). The proprietors then decided to liquidate the Company.

[73] BL Add ms 25,545, 177v.

Dividend due	announced	paid	rate	note
1720:I	14 Apr 1720	Mar 1721	10%	in stock
1720:II	9 Mar 1721	1 Sep 1721	5%	
1721:I	30 Sep 1721	29 Sep 1722	4%	paid with 5% interest
1721:II	10 Mar 1722	25 Dec 1722	3%	paid with 5% interest
1722:I	20 Jul 1722	30 Jul 1722	3%	
1722:II	28 Jan 1723	20 Feb 1723	3%	
from 1723 to 1726			3%	
1727:I	21 Jul 1727	11 Aug 1727	3%	
1727:II	26 Jan 1728	20 Feb 1728	2.25%	
from 1728:I to 1733:I			2%	
1733:II		20 Feb 1734	1.25%	
from 1734:I to 1740:I			1.5%	
from 1740:II to 1745:I			1.75%	
from 1745:II to 1757:II			2%	
from 1758:I to 1854:II			1.75%	

Table 14: Semi-annual dividends paid on South Sea Stock, 1720–1853. I = midsummer, II = Christmas. Sources: minutes of the General Court (BL Add ms 25,544–25,548).

Bibliography

Anderson, Adam. 1787. *An historical and chronological deduction of the origin of commerce, from the earliest accounts.* London: J. Walter.

Bannister, Saxe, ed. 1859. *The Writings of William Paterson.* London: Judd & Glass.

Carswell, John. 1960. *The South Sea Bubble.* Stanford: Stanford University Press.

Chrétien-Deschamps, François-Michel. 2015. "Lettres sur le Visa des dettes de l'État ordonné en 1721." Chap. Introduction, edited by François R. Velde, ix–lxiv. Paris: Classiques Garnier.

Cobbett, William. 1806–20. *Parliamentary history of England from the Norman conquest, in 1066 to the year 1803.* London: T. C. Hansard.

Dale, Richard S., Johnnie E. V. Johnson, and Leilei Tang. 2005. "Financial Markets Can Go Mad: Evidence of Irrational Behaviour during the South Sea Bubble." *The Economic History Review* 58 (2): 233–71.

Dickson, Peter George Muir. 1967. *The Financial Revolution in England : a Study in the Development of Public Credit, 1688–1756.* London: Macmillan.

Flinn, Michael W. 1960. "Sir Ambrose Crowley and the South Sea Scheme of 1711." *The Journal of Economic History* 20 (1): 51–66.

Giusti, Giovanni, Charles Noussair, and Hans-Joachim Voth. 2014. *Recreating the South Sea Bubble: Lessons from an Experiment in Financial History.* ECON - Working Paper 146. Department of Economics, University of Zurich.

Hutcheson, Archibald. 1721. *Some Computations and Remarks Relating to the Money Subscribers, and the Proprietors of the Publick Debts.*

Kleer, Richard A. 2015. "Riding a wave: the Company's role in the South Sea Bubble." *The Economic History Review* 68 (1): 264–85.

Neal, Larry. 1990. *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason.* Cambridge: Cambridge University Press.

Pulteney, William. 1734. *An Enquiry into the Conduct of our Domestick Affairs from the Year 1721, to the Present Time.* London: H. Haines.

———. 1735. *The Case of the Sinking Fund, and the Right of the Publick Creditors to it Considered at Large.* London: H. Haines.

Quinn, Stephen. 2008. "Securitization of Sovereign Debt: Corporations as a Sovereign Debt Restructuring Mechanism in Britain, 1694 to 1750." March.

Satsuma, Shinsuke. 2012. "The South Sea Company and its plan for a naval expedition in 1712." *Historical Research* 85, no. 229 (February): 410–429.

Scott, William Robert. 1911. *The Constitution and Finance of English, Scottish and Irish Joint-Stock Companies to 1720.* Cambridge: Cambridge University Press.

Shea, Gary S. 2007. "Financial market analysis can go mad (in the search for irrational behaviour during the South Sea Bubble)." *The Economic History Review* 60 (4): 742–65.

Sorsby, Victoria Gardner. 1975. "British trade with Spanish America under the asiento, 1713-1740." PhD diss., University College London.

Temin, Peter, and Hans-Joachim Voth. 2004. "Riding the South Sea Bubble." *The American Economic Review* 94 (5): 1654–68.

Walpole, Robert. 1735. *Some Considerations Concerning the Publick Funds, the Publick Revenues, and the Annual Supplies, Granted by Parliament.* London: J. Roberts.